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Steamship-Building.

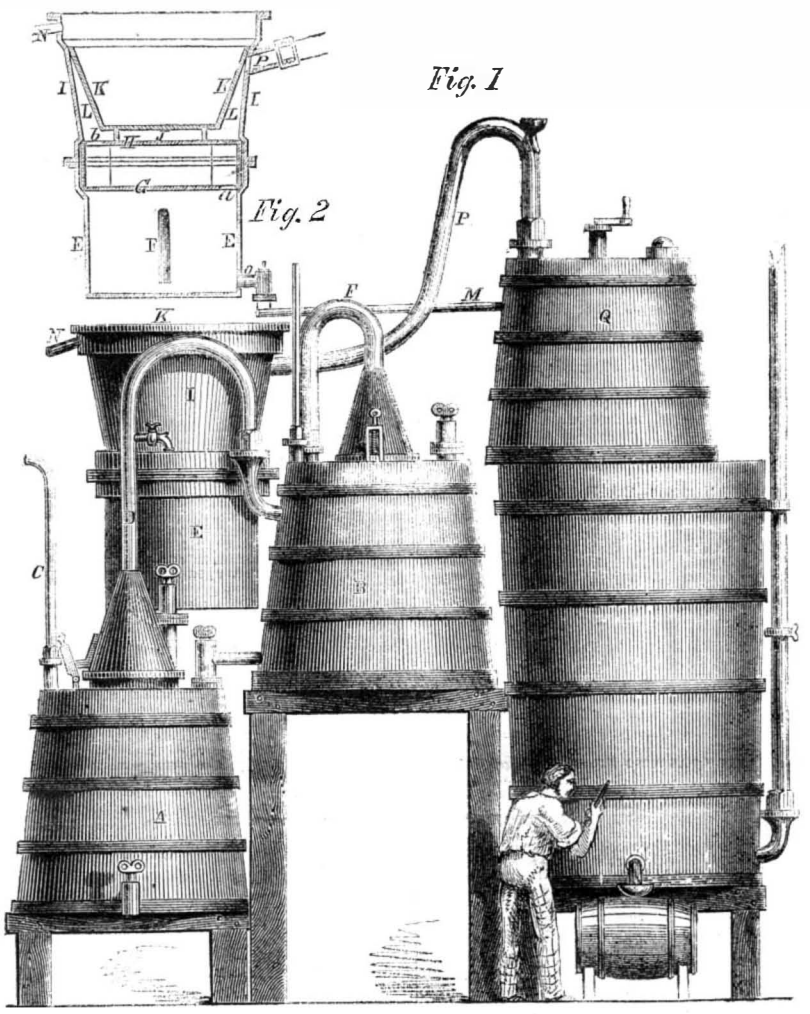
In England the steamship-building trade appears to be very active, while with us it is, and has been for a long period of time, very dull. One company at Newcastle-on-Tyne is building four iron steamboats for the navigation of the river Volga, in Russia, and an equal number for the East India Railroad Company. The latter boats are of 7 feet draft, 30 feet beam, and 225 in length. The plating of the hull is three-eighths of an inch thick of puddled steel, which is double the strength of iron plate of the same thickness; and a web girder, ten feet deep, extends the whole length of each vessel, forming its backbone and giving it great stiffness. There is one peculiar feature in which British steamers of the present day differ from those of our country, namely, the materials of which they are constructed. A timber ship is the exception in England and iron ones are the rule; with us the reverse is the case.

New Distilling Apparatus.

The subject of distillation is always an interesting one to study, so beautiful and regular are the changes which take place in the substance which is being distilled. Alcohol, for example, is always formed from sugar, which, in fermentation, splits up into that spirit, water, and carbonic acid gas. Sometimes the sugar is used as such, and sometimes the starch contained in vegetable substance is first converted into sugar, and then fermented. The alcohol is contained in a watery solution, and from this it has to be separated by distillation, which is easily done, as alcohol evaporates at a much lower temperature than water. The apparatus in which this is done is called a still, and the vapor is again liquified in a condenser or worm tub.

The subject of our engraving is an improved apparatus for this purpose—invented by Peter Kessler, of Belleville, Ill., and patented March 1, 1859—which we will now proceed to describe.

KESSLER'S DISTILLING APPARATUS.



Two stills, A and B, are placed as usual, the wort or beer in the still, A, being heated by steam conducted to it by a pipe, C. The vapors thus arising from the beer ascend through a pipe, D, to the still, B, from which they enter a vessel, E, by means of a pipe, F. This vessel is closed at the top by a cup, G, the bottom of which has an opening, *a*, and a plate, H, placed on the top of the cup. G has another opening, *b*, opposite *a*.

Another cylindrical vessel, I, is placed on the top of E, communicating with it by means of the openings, *a* and *b*, and the circulation is further increased by a hollow cylinder. J, of such hight as to reach the bottom of a conical vessel, K. The space left between the outside of the vessel, K, and the inside of the vessel, I, decreasing towards the top, where it runs into a sharp point. The gaseous liquor contained in the vessel, E, ascends through the openings, *a* and *b*, and fills the space, L, and if cold water is poured into the vessel, C, the impurities contained in the liquor are condensed. Water is admitted to the vessel, K, by means of a pipe, M, and a pipe, N, serves to carry off surplus water to prevent overflowing. It is obvious that the condensation takes place more rapidly towards the top of the space, L, if the vessel K, be filled with water up to the top, as the cold surface of the outside of the vessel, K, increases, while the contents of the space, L, decrease, so that by putting more or less cold water into the vessel, K, the strength of the liquor may be regulated. The condensed impurities, *i e.*, the low wine, flow back to the vessel, E, through the openings, *a* and *b*, and they are carried back to the still, A, by means of a faucet, O, which is attached to the vessel, E, close to its bottom.

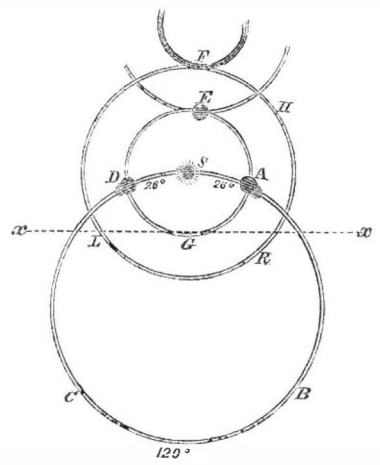
By this arrangement the pumping out of the low wine is avoided, and a great deal of trouble and labor saved thereby; and as a certain quantity of good spirit would always be contained in the low wine, the flowing back into the still by this arrangement causes a great saving, as much of the liquor contained in the low wine as treated in the usual way is lost, the low wine being always pumped out at a high temperature, so that the liquor which escapes therefrom, when coming in contact with the cold atmosphere, is lost.

The gaseous liquor thus freed from its impurities to a degree which depends upon and may be regulated by the quantity and the temperature of the water contained in the vessel, K, which escapes through a pipe, P, that leads into a suitable cooler, Q, from which it is drawn off into casks.

Any further information or particulars may be obtained from the inventor by addressing him as above.

Halos and Mock Suns.

The accompanying figure illustrates some interesting natural phenomena witnessed at New Ipswich, N. H., on the 2d instant. The sketch and description have been communicated to us by E. T. Quimby, M. A., principal of Appleton Academy, who took the measurement of the angles by the theodolite to ensure correctness.



The observations from which this sketch was made were taken at about 4 P. M., the sky at the time being quite hazy. The large circle, A B C D, extended horizontally around the heavens, and was about the same altitude on either side. It was of white light, and had the real sun, S, and the two mock suns, B and C, in it, at equal distances (120°) apart. The smaller circles were vertical, and it will be observed that they cannot have their true relative position on the sketch, as the large one is parallel to the horizon, while the others are perpendicular to it, hence if they could be put in proper position, the mock suns, A and D, would be in a line with the real sun, S. These two mock suns were in the large horizontal halo, and also in the vertical one, A G D E, and were distant from the sun about 26°. There was another mock sun for a part of the time at E, and there was a partial halo, as represented, turned in the opposite direction. Outside of this, at a distance of 45° from the sun, appeared another halo, which was quite dim, though somewhat brighter in its upper part; and tangent to it was the partial halo, F, evidently concentric with the partial halo, E. The spot, F, was the brightest of all the halos, and exhibited the prismatic colors very plainly. The mock suns showed the colors also, especially A and D. The halo themselves were all white, except the arcs, F and E, the last showing the colors but faintly. X X is the line of the horizon.

Similar phenomena were witnessed at Boston and other places as well as New Ipswich, on the same day. The Boston *Traveler* says of the parhelia:—

"While the sun was shining rather faintly through cirrus clouds, a luminous circle was suddenly formed at the distance from it of about fifteen degrees, and quite complete around it, although the prismatic colors were brighter in some parts of the luminous circle than they were in others, bnt where they were brightest they appear as brilliant as in the finest rainbow. Moreover, on the north and on the south sides of the circle at the altitude of the sun, a well defined mock sun was seen, and on the upper part of the arch a third, less perfect, but all strongly tinged with the colors of the spectrum. This phenomenon, (which continued visible about fifteen minutes, until the sun became wholly overcast) is not very uncommon in some parts of the earth, but is seldom seen here."

We have seen several halos and mock suns, but none exactly like those represented by the sketch of our correspondent.

Self-Ruling Envelopes.

Mr. G. F. Nesbitt, of this city, the Government contractor for the supply of stamped envelopes, has introduced a new envelope into the market, which is at once convenient and simple. The novelty consists in the combination of black lines with the under wing of the envelope in such a way as to be concealed from the observation by the side wings, except when the face and back are pressed together to receive the superscription. The millions of people who are accustomed to write on ruled paper will find it an inestimable gain in the appearance of their addresses on envelopes.

Woolen Factory in Oregon.

The pioneer woolen factory on the Pacific coast has lately been established at Salem, Oregon. It is furnished with the latest and most improved machinery from the eastern States, and has turned out some cassimeres which are equal in every respect to any manufactured in New England. As Oregon wool has a high reputation, we have no doubt but good broadcloth, and all other sorts of woolen articles, will be made of it at no distant day.

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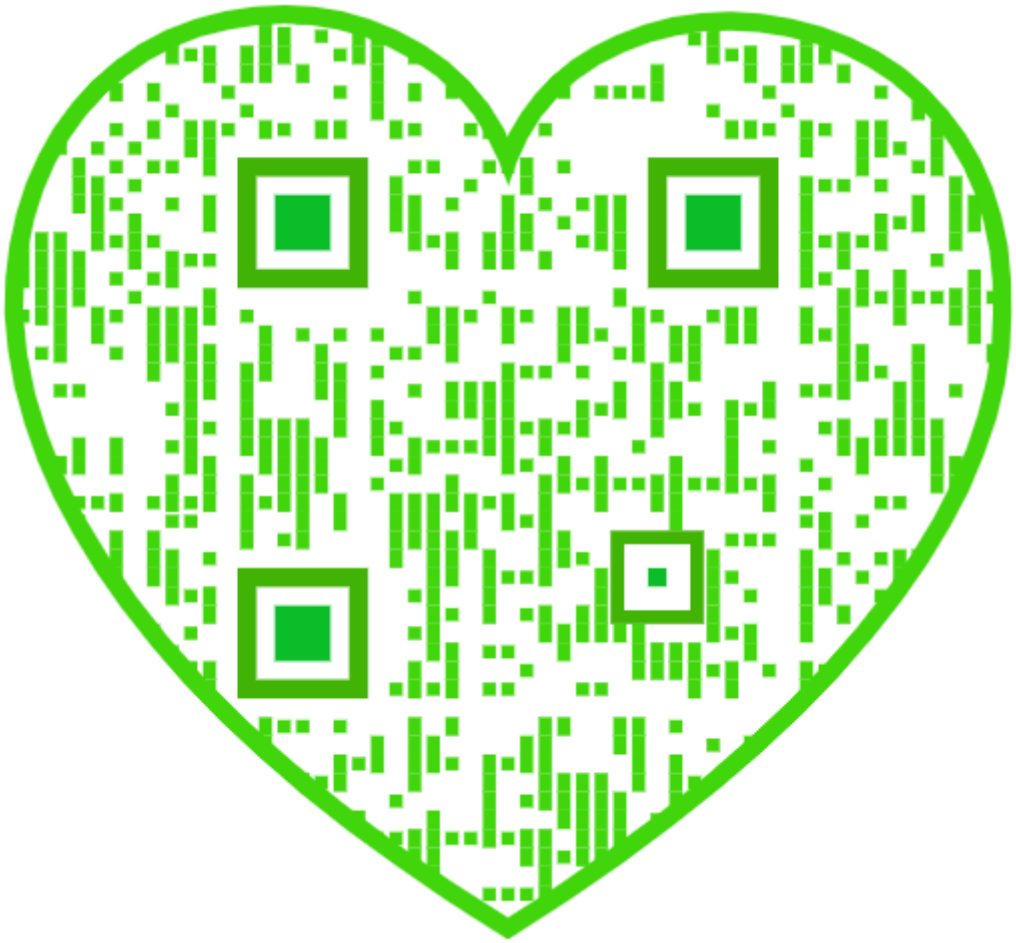

Issued from the United States Patent Office

FOR THE WEEK ENDING APRIL 19, 1859.

[*Reported officially for the Scientific American.*]

*** Circulars giving full particulars of the mode of applying for patents, size of model required, and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, New York.

STEAM BOILER FURNACES—Jonathan Amory, of West Roxbury, Mass.: I claim the method of increasing the combustion and protecting the combustion curves, substantially as described.

DEVICE FOR CONVERTING ALTERNATE CIRCULAR MOTION INTO DIRECT CIRCULAR MOTION—Abraham Bartholf, of New York City: I claim the dog, C, spring, D, and lever, E, combined and arranged relatively to each other and applied to the wheel, A, or its equivalent, substantially as described.

[This device for converting alternate circular or oscillatory motion into direct circular motion, consists in an arrangement of a dog, a lever and a spring in combination with a wheel or other body to which the direct motion is to be imparted, whereby as the lever is moved in one direction, the dog is caused to bite upon the surface and move the wheel or body to which it is applied, and as it is moved in the other direction the dog is caused to slip over the said surface.]

BURIAL CASES—A. C. Barstow, of Providence, R. I.: I claim constructing a metallic burial case with the ogee-shaped ends, as described, whereby great reduction in weight and economy in the manufacture is secured, and at the same time all the space required afforded.

I also claim forming the metallic case with the overlapping strengthening ribs, as described.

FURNACE FOR HEATING TIRE—M. Battel, of Albany, N. Y.: I claim, as an improved article of manufacture, a furnace for heating tire, composed of an annular body, A, fire space, B, central tube, C, with cover or damper, D, therein, to regulate the draft, extension, E, rod, F, crane, G, top, H, and otherwise constructed as shown and described for the purpose specified.

[Tir s after being bent require to be heated to be placed upon the wheel; this is an annular furnace for the purpose, from which the tire can be easily removed, and in which tires of different sizes may be heated in the same furnace.]

ANCHOR TRIPPER—T. L. Baylies, of Richmond, Ind.: I claim the arrangement and combination of the tripping bar, B, shaft, C, and cams, j k, substantially as and for the purpose shown and described.

[The operation of liberating an anchor or casting it from a vessel is called "tripping," and this is an improved device for that purpose. The object is to effect the desired result without danger to the operators. The invention consists in giving the tripping bar an oblique movement by means of cams and slots, whereby all "end thrust" is avoided, and the chain released from the tripping-bar without transmitting a re-acting power to the working parts, an occurence which often takes place much to the jeopardy of the seamen and the device.]

MACHINE FOR FILING SAWS—A. M. Beardsley. of Elkhart, Ind.: I do not claim a swinging frame, either for supporting the file or the file carriage, neither do I claim lifting the swinging frame and file, so as to clear the teeth of the saw by means of a spring, or any other device, so that the saw can be fed beneath the file as each tooth is sharpened.

But I claim, first, The arrangement of the swinging frame of the file carriage upon the adjusting plate, E, so that it can be turned over and supported upon the bed plate, A, in the manner and for the purposes described and shown in the drawings.

Second, The arrangement of the check pieces N, upon the adjusting plate, E, between the arms of the swinging frame, for the purpose of bracing the latter against the thrusts of the file carriage, while said frame is free to rise and fall, as described.

Third, The arrangement of the gaging screw, M, in the cross-piece, H, of the swinging frame, by which the teeth are filed to a uniform depth, without interfering with the rising of the file carriage, to conform to the taper of the file, as described.

Fourth, The arrangement of the seats, a a, at each end of the bed plate, A, whereby the implement may be supported directly upon the clamp of the saw, for the purposes described.

ARTIFICIAL LEGS—Douglas Bly, of Rochester, N. Y.: I am aware that straps from the shoulders have been used, both elastic and otherwise, for the purpose of retaining the artificial limb in its place, and this I do not claim.

But I claim the use of an elastic strap, or apparatus, from the shoulders, or upper part of the body, when attached to the artificial leg in such a manner that its contractile power is exerted in connection with the backward motion of the shoulders, to produce the forward motion of the foot, substantially as set forth.

WASHING MACHINES—Benj. Bradbury, of Abington, Ill.: I claim the arrangement described of the levers, h e e, and pitman, f, moving the dashers, d, over the concave of the box C, the whole constructed and oporating as specified.

FAUCETS—C. K. Bradford, of Lynn, Mass.: I claim the faucet, constructed as described, to be operated by applying pressure directly to the head of the case, said case for this purpose being provided with an outside elastic diaphragm forming the head thereto, and combined with a valve rod, arranged in relation to the case internally, so that the ends of said rod terminate respectively at and are secured to the valve and diaphragm, as set forth.

BEDSTEAD—Wm. H. Bramble, of Springfield, Ohio: I claim, first, The combination of an under and upper section, united to each other by springs and links, so that the upper section may have a free, vertical and horizontal motion, substantially as described.

Second, I claim, in combination with a bedstead made of two sections, as described, the making of the posts of the upper section shorter than the supports of the under section, so that said upper section, when placed on the lower one, shall be entirely clear of the floor, as set forth.

Third, I claim the combination of the loose slats, springs and webbing, when said webbing runs longitudinally or lengthwise of the bedstead, in the manner and for the purpose stated.

COOKING RANGE—B. Wells Dunklee, of Boston, Mass.: I claim the arrangement of the two induction flues, A B, the gage throats, their plates or bars, and the flues around and between the two ovens, a single damper, and its openings being placed over the middle flue, and with respect to the two flues, as specified.

GOVERNOR FOR STEAM ENGINES—John Broughton. of New York City: I claim effecting the connection between the ball arms, G G, and the central rod, J, by means of two levers, H H, and two links, K K, the whole being applied and operating substantially as set forth.

[This was illustrated and described on page 181 of the present volume of the SCI. AM.]

LUBRICATOR—P. G. Brown, of Schenectady, N. Y.: I claim the combination of the reservoir, A, provided with a discharging aperture, c, valve, F, having a receiving aperture, d, in it, and air-chamber, H, or the equivalents thereof, when said air-chamber is arranged to control, or assist the discharge, substanttally as specified.

I likewise claim giving to the valve, constructed and arranged as above described, which conveys the oil from the reservoir to the discharging aperture, an intermittent revolving motion, in one and the same direction, for and by the action of the handle, I, or its equivalent in either direction of the travel of the latter, or in reverse directions thereof, essentially as set forth.

LOCK—Geo. Clay, of New York City: I claim the specified construction and arrangement of the following parts for united operation in a lock, viz.: right and left double-walled case, A t t, sliding right and left key hole guard plates, d d, e' e', right and left forked bars, e e, s s, main and auxilliary tumblers, D D, f', f' and bolt, D a, all for the purpose set forth.

[The special object of this invention is to prevent the lock being picked at the outer side of the door when locked at the inner side, and also to prevent the lock being unlocked by turning the key, by means of instruments from the outer side when the key is in the lock. This will give greater security to door-locks for dwellings without materially increasing the cost.

RAILROAD CAR BRAKE—Wm. E. Cooper, of Dunkirk, N. Y.: I claim the arrangement of the belt cord, E, pulleys, h h and m, and movable pulley block, F, with the brake cord, I, the same being connected and operated substantially in the manner set forth, for the purpose of setting all of the brakes in the entire train, simultaneously and from any point within the train, as is fully described.

JOURNAL BOXES—Rienza Daniels, of Almena, Mich.: I claim the axle, c d, furnished with a screw-tapped arm c', and having toothed and plain sections, a a a, E, b b, of a journal, arranged and clamped upon it, in combination with the internally toothed journal box, A B B, and with rods, m m, toothed and plain sections of frictional rollers, D D, arranged and clamped on them, all in the manner described and for the purpose set forth.

HARVESTING MACHINE—Geo. Esterly, of Whitewater, Wis.: I claim, first, The adjusting of the rake, Q, by means of the socket, O, suspended by journals, or trunnions s s, and secured in the desired position by set screws, v, and bars, u u, or their equivalents, in combination with the adjustable platform, L, whereby the rake and platform may be adjusted to suit the hight the grain is being cut.

Second, The segment plate, U, with the curved flanch, J, for the purpose of carrying the rake backwards, as described.

Third, The use of the pendant rod, or bar, f, provided with the rollers, g h, in combination with the flanch, j, for the purpose specified.

I do not claim the guard finger, T—

But I claim, fourthly, Attaching the guard finger, T, to the bearing, W, in the manner described, whereby it may be adjusted for the purpose specified.

MACHINE FOR QUARRYING STONE, &c.—Jonah Ellis, of (near) Warrington, England. Patented in England, Dec. 6, 1858: I lay no claim to the parts described when taken separately.

But I claim a portable apparatus, designed for cutting grooves in rock or other mineral substances, for the purpose of quarrying the same in blocks, and consisting of supports, B B, which are fastened to the rock and sustain an adjustable bed plate, D, and screw shaft, E, upon which bed plate and screw shaft a tool-stock and adjustable cutter is made to traverse between two previously drilled or open spaces which form the extremeties of the proposed cut, substantially as described and represented.

WATER-COOLER FOR STEAM ENGINES—Robert Eunson, of New York, N. Y.: I do not wish to confine myself in the use of my decalorator, to cooling the condensing water of steam-engines, but contemplate its application to all operations of cooling, for which it is fitted. Nor do I confine myself to the cylindrical form of my present arrangement. Nor do I claim my decalorator, broadly, as a tubular device, for cooling the condensing water of steam-engines by means of seawater outside of the tubes.

But I claim the use or employment of a decalorator, such as is described, or its equivalent, when the series of very small, horizontal tubes are so arranged in respect to the current of water outside of the tubes, that the centre of each tube, in one row, shall be opposite, or nearly opposite to the centre of the space between the tubes in the next row in combination with supporting and directing tube-plates, such as are described, and for the purposes set forth.

I also claim the use or employment of tubes arranged in rows as described, in combination with the tube-plates and shell of the decalorator, when so arranged that the current of cold water is made to flow across the tubes, being directed by the tube-plates from side to side or from top to bottom, and from bottom to top of the shell and around the tubes being made to encircle them, by its current, in consequence of their arrangement of rows as described, and at the same time, progress lengthwise of the shell and tubes in a direction contrary to the stream of fresh water inside of the tubes for the pur oses set forth.

FIREMAN'S LADDER—Daniel Fitzgerald, of New York, N. Y.: I claim, first, The applying the tanks A B, or their equivalent, to ladders, with or without water, to elevate and hold said ladders, substantially as described.

Second, Conveying the water through a long distance by an elongated pipe, E, or its equivalent, connected with the apparatus, substantially as described.

Third, Managing the curved or jointed pipes, Q R, by means of the lever, H, or its equivalent, in the manner described.

MOLDS FOR STEEL CASTINGS—Perry G. Gardiner, of New York, N. Y.: I claim, first The constructing the mold with a cup or reservoir for holding all the melted metal for casting, closed and opened at the entrance of the sprue, by the movable plug or stopper as described.

Second, The spherical hollow chamber, a, and air escape passage, d'', and self-acting plug, f, to permit the rarified air to pass from the mold, and to escape, and to shut off the external air from the mold, operating in the manner and for the object described:

Third, I claim the combination and arrangement of the two cups, the sprue, the figure, O, the tool or casting, and air-vents or passages, so as to form a bent tube by which the casting is filled from the bottom, and the external air excluded as described.

Fourth, I claim the use of the molds in a state of intense heat, never less than 500° of Fahrenheit, and generally at a much higher temperature, for the purpose of producing, as nearly as practicable, a vacuum within the mold: but I do not claim the mere heating or warming of the molds to produce a smooth casting, that having been a common practice heretofore.

MACHINE FOR SMOOTHING SOLES OF BOOTS AND SHOES—Othniel Gilmore, of Raynham, Mass.: I claim the improved manufacture of a sole-smoothing or reducing-wheel, made with the convex grinding annulus, a, concentric heel recess, B, and acute angled edges, b c, arranged substantially as described.

OVEN FOR COOLING CASTINGS—P. F. Geisse, of Wellsville, Ohio: I am aware that ovens for raising the temperature, after the wheels have been put into them have been used, therefore I do not claim an oven of itself as now.

I am also aware that a current of air has been allowed to pass through the hubs of car-wheels when introduced into a case not susceptible of having its temperature raised, therefore, I do not claim this as new,

But I claim the pipe, d, connecting the eyes, or hubs of the wheels with flues, E, and plate, c, for causing the current of air to pass through the eyes only of the hubs, in cooling, in combination with heating oven, A, and pits, B, operating as described and for the purposes set forth.

MODE OF ATTACHING CASTERS TO TRUNKS—Isaac H. Giffing, of New York, N. Y.: I do not claim the roller or stop, separately, as they have been used on trunks for many years.

What I claim is the method described of constructing and attaching casters to trunks.

YOKE-RING ATTACHMENT FOR THE POLE OF OX-CARTS—James C. Gilbert, of Leeds Junction, Me.; I claim the described arrangement of the backing bearer, f, and engaging notch, c, of the spring-slider, D, with respect to and to operate with the draft-hook, C, substantially in manner as specified.

ATTACHING CORDS TO WINDOW SASH—Porter A. Gladwin, of Bristol, Mass.: I do not rely upon a spring acting as such, independent of the cord attached thereto, nor do I wish to claim it.

But I do claim the employment of the slotted tension spring or plate, D, in combination with the cord, G, and pulley, C, in the manner as and for the purpose described.

WINDLASSES—Wm. P. Goolman, of Dublin, Ind.: I claim, first, In the described combination with a winding drum or capstan of any suitable form, the application of a reel, D, operated by the traction of the entering cable, to take up the slack from the said drum or capstan, as explained.

Second, In combination with the said reel and capstan, I claim the adjustable idle pulley, G, operating as set forth, to maintain the needful traction of the cable against the reel, or vary it as may be found needful.

PRINTING-PRESSES—Geo. P. Gordon, of New York City: I claim, first, The combination of one or more sets of revolving grippers, with the finger stops, or their equivalents, for the purpose of piling the sheets of paper in an even and regular heap or pile, substantially as described.

Second, I claim the combination of a vibrating feedboard, with the rotating or revolving platen, for the purpose of feeding the sheets of paper regularly and with precision at each rotation of the platen.

Third, I claim the combination of a rotating reciprocating bed with a revolving platen, all of which is fully described.

BENCH PLANE-STOCK—Jackson Gorham, of Bairdstown, Ga.: I claim constructing the plane-stock of a central wooden portion, a a', secured between metal side-plates, b b, provided with flanches, h h, the part a' being permanently secured between the plates, b b, and the part, a, rendered adjustable between said plates by set screws, a a, substantially as and for the purpose set forth.

[An engraving and description of this will be found on another page.]

COTTON GINS—Edwd. Gotthelf, of Galveston, Tex.: I claim, first, The method of feeding the cotton bolls to the rollers, b, by means of a blast issuing from a slotted or perforated tube, or its equivalent, substantially as set forth.

I do not claim creating a blast of air to issue from the periphery of the brush cylinders, by means of wings within them, by their own velocity.

But I claim, secondly, The arrangement of the two cylindrical brushes, d, in combination with the rollers, b, when the former are so constructed that a blast from an independent source may be forced through slots or perforations in their peripheries, substantially as and for the purposes set forth.

Third, I claim the comb, e, in combination with the blast-pipe, z, for gathering the lint off the upper brush roller and discharging it into its receptacle, in the manner set forth.

SURVEYOR'S CHAIN—Josiah M. Grumman, of Brooklyn, N. Y.: I claim, first, The method of making civil engineers' and surveyor's chains of a peculiar form of link, as described and shown.

Second, The arrangement of spring-balance and level in the same tube or covering, with the arrangements for adjusting, as described and shown.

Third, The method of allowing for the variation of the temperature by a scale of variation on the chain with the adjusting slide and clamp, as described and shown, so that the chain may be virtually shortened or lengthened to meet the temperature.

Fourth, The use of the spring catch, by means of which the balance and level is detached from the end link and attached to any other link in the chain at the pleasure of the operator.

Fifth, The method of attaching the thermometer to the end bar of the chain, as described and shown.

BUSTLES—Isaac W. Hakes, Jr., and A. H. Hakes, of Norwich, Conn.: I claim, as an improved article of manufacture, a "bustle" provided with front holding-straps, a a', and sprin , E, when otherwise constructed as shown and described.

[By a suitable arrangement of cords, springs and slides, a bustle is made which may be adjusted to vary its form, within certain limits, to suit the taste or comfort of the wearer, and which retains its form during wear better than the bustles previously used, and which, with the exception of the waist-band, can be kept entirely free of the person.]

COOLING AND FEEDING MATERIAL TO MILLS—B. Q. Harrington and U. B. Burris, of Missouri City, Mo.: We claim, first, The spiral chambers, E E, for the purpose of creating currents of air for keeping the stones cool, substantially in the manner described.

Second, The combination of the spiral buckets with the spiral chambers, when both are constructed and arranged in the manner and for the purpose fully set forth.

CHAIRS FOR RAILROADS—Alex. L. Holley, of New York City: I claim the combination of the splice, C, and the bracket, D, (the said splice and bracket being either the same piece or separate pieces,) with the foot of the rail, e, acting as a tension piece, or with a separate tension piece, B, in the manner and for the purposes substantially as described.

VARIABLE CUT-OFF GEAR FOR STEAM-ENGINES—Alex. L. Holley, of New York City: I disclaim the method described of moving the supplementa y valve, e, the same being in use.

I disclaim the use of a supplementary steam piston as the sole mover of a valve.

I claim such a combination of the motion of an eccentric, or its equivalent, with the motion of a steam piston for moving a valve as will effect a variable cut-off of the induction steam without interfering with a free exhaust, substantially in the manner described.

VARIABLE CUT-OFF GEAR FOR STEAM-ENGINES—Bennet Hotchkiss, of New Haven, Conn.: I am aware that the valve has been tripped so as to cut-off the steam at any definite portion of the stroke of the piston, by an adjustable inclined plane and lever, when the inclined plane was adjusted and fixed by hand, as in the patent of F. E. Sickles; I therefore do not claim the use of the inclined plane and lever to trip the valve, as such, as my invention.

But I claim the combination of the sliding-bar, E, with the sliding-collar, F, when constructed, arranged and made to control the time of the cut-off by the operation of the governor or regulator only, substantially as described.

CORN-SHELLERS—Wm. H. Hovey, of Springfield, Mass.: I claim the arrangement and combination of the endless elevator, E, the spout, B, the spring-presser, G, and the shelling-cylinder, F, in the manner described.

I also claim the arrangement and combination of the grated trough, D, with the elevator, E, and the mechanism for removing the kernels from the cobs and separating both kernels and cobs, as described, such mechanism consisting mainly of the presser, G, the shelling-cylinder, F, and the grid or bar, H, arranged and co-operating as specified.

I also claim the combination and arrangement of the guide-hopper or receiver, L, with the shelling mechanism, the grated trough, D, and the elevator, E, in the manner and for the purpose specified.

CORN-SHELLERS—James J. Johnston, of Alleghany, Pa.: I claim the combination and arrangement of the disks or shelling-wheels, c and d, with the guard, j, guide, h, and spring or press-plate, k, constructed and operating in the manner and for the purpose specified.

COMBINED STUMP EXTRACTOR AND PRESS—Geo. Kenny, of Milford, N. H.: I claim, first, The combination of the main frame, u u, anchor frame, r r, canting-frame, B D, with the shaft, a, and the devices for working it, the whole being constructed and combined substantially as and for the purposes set forth.

I also claim the main frame and windlass device above described, in combination with the removable pressing-frame and box, substantially as and for the purposes set forth.

APPARATUS FOR DRYING SHOE-PEGS AND GRAIN—Saml. Kimball and Wm. Sawyer, of Boxford, Mass.: We claim the arrangement of the steam pipes, f f f, etc., with the main cylinder, C, covered with wire gauze or perforated sheet metal, in whatever manner the steam may be introduced into said pipes, in combination with the floats, K K' K'' K''', constructed and operating in the manner set forth.

Also the arrangement of the steam pipes, f f f, etc., with the main cylinder, C, covered with wire gauze or perforated sheet metal, without the floats, K K' K'' K''', constructed and operating substantially in the manner set forth.

PUMPS—A. C. Laning, of Wilkesbarre, Pa.: I claim the stationary pipe or tube, A, valve-chamber, B, and reciprocating-cylinder, C, combined and arranged substantially as and for the purpose set forth.

[By this invention reciprocating-pumps can be worked as well in an inclined or horizontal as in a vertical position. The invention is more especially designed for mining and similar purposes where frequently pumps are necessarily inclined and often placed in a horizontal position. The ordinary reciprocating pump is preferable when placed in a vertical position, but cannot well be used in any other, as the wear caused by the piston bearing on one side of the cylinder only produces leakage and imperfect working.]

BRICK MACHINES—David Locke, of Lexington, Mo.: I claim the elevated layer of tempered clay, d, arranged or formed substantially as shown, in connection with the traveling-plates or cutters, p q, and pressure plates, r, arranged to operate substantially as and for the purpose set forth.

[By this invention the process of manufacturing bricks is greatly expedited and facilitated, and the work may be done in a superior manner much better than can be done by the older processes of molding, either by hand or machinery.]

SHINGLE-MACHINE—H. H. Low, of Galena, Ill.: I do not claim a vertical reciprocating frame, E, containing the bolt from which the shingles are sawed, for such device has been used, and may be seen in the machine formerly patented by me and previously alluded to.

But I claim operating the vertically reciprocating and balance frame, E, from the saw or power shaft, B, through the medium of the pulleys, c e, and gearing, g h i j, arranged with the slide bar, I, arm, H, and the springs, n n', and spring stop, J, substantially as and for the purpose set forth.

[This is an improvement on a sawing machine patented by this inventor March 16, 1858, and it cuts the shingle direct from the bolt; the machine is perfectly automatic in its action and works well.]

COB AND GRAIN MILL—John R. Marston, of New York City: I claim the set bolt, j, with its nut, or its equivalent, the slot, h, in the shell of the cob-cutter and the collar, i, on the shaft, for the more practicable and reliable mode of retaining the cutters of the cob-mill in their proper places, substantially as and for the purposes set forth.

EGG BEATER—James F. Monroe, of Fitchburgh, Mass., and E. P. Monroe, of New York City, assignors to E. P. Monroe aforesaid: We claim the two beaters, I and J, constructed of wires, i and j, and arranged in the adjustable frame, A, in such a manner that the same, by means of pinions, F and G, and by the bevel wheel, D, receive a rapid rotary motion in opposite directions, substantially as and for the purpose specified.

[This invention consists in arranging in an adjustable frame two beaters, one inside the other, which receive motion in opposite directions by means of two pinions which gear into a large bevel wheel, and on opposite sides of it, so that, by rotating the bevel wheel by a handle, the beaters receive the required motion.

IRON CARRIAGE WHEEL—John D. Murphy, of Baltimore, Md.: I am aware that combiued cast and wrought iron wheels have been constructed before, and I therefore wish to be distinctly understood as disclaiming the invention and construction of such wheels, broadly considered.

But I claim a combined wrought and cast-iron wheel, when the several parts composing said wheel are constructed in the form and arranged and combined in the order, as and for the purposes shown and described.

I also claim having the entire rim, d, of the tread of the wheel open at one place, as shown at d', until after the hub is cast, in combination with the mode of inserting and fastening the spokes in the rim or tread of the wheel, d, as and for the purposes described.

SKATES—Isaac W. Norcross and Fredk. M. Norcross, of Lowell, Mass.: We do not claim attaching the runner to the foot-stand by means of springs, as we are aware that such is not new, it being the subject of the United States Patent, No. 22,895.

But we claim an improved mode of arranging and applying the spring, each being a continuation of the runner, and to extend laterally and longitudinally with reference to, and to be fastened at the toe and heel of the foot-stand, as shown in the drawings and as specified.

APPLYING ELECTRICITY IN DENTAL OPERATION—Wm. G. Oliver, of Buffalo, N. Y.: I am aware that electricity has been applied as an anesthetic agent in dental operations, and do not, broadly, claim the application of such an agent.

But I claim the employment, in produciug local anesthesia in dental operations, of an apparatus, in which only non-metallic conductors are brought into contact with the parts being operated upon, as set forth.

RAILROAD CAR COUPLINGS—Geo. W. Parshall, of Middlefield, N. Y.: I claim the construction and combination of the head-piece, M, tongue, R, wheel, O, and pin, D, arranged and operating as described and set forth for the purpose specified.

SNOW PLOWS FOR RAILROADS—Willard Rhoads, of Baltimore, Md.: I claim the projectiug flange, a, in combination with the vertical sides, b, in the construction of the railroad track clearers.

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SASH CORD FASTENER—Joseph R. Payson, of Covington, Ky.: I do not claim, broadly, a sash and fastener, nor do I claim the neck, c, and eye, d, separately considered.

But I claim the cylindrical ring, a, in combination with the opening, b, neck, c, and eye, d, substantially as described, and for the uses and purposes mentioned.

WEIGHING SCALES—Saml. Pierce, of Cambridgeport, Mass.: I claim the combination and arrangement of the two poise slides, A B, and the fulcrum block, C, substantially in the manner and for the purposes specified.

FLUID MEASURER—James L. Perry, of Mansfield, and Melzer Burt, of Norton, Mass.: We claim the fluid measurer, constructed substantially in manner and to operate with respect to a barrel or reservoir, as specified, that is to say, as made of a close vessel, A, induction and eduction faucets and a tell-tale valve and valve openings, or equivalent, combined and arranged essentially as set forth, the valve serving to indicate when the case may be full of liquid, the induction faucet allowing the flowage and interruption thereof of liquid into the case, and the eduction faucets determining the amount of flowage out of the case, as described.

MILLS FOR GRINDING, CRUSHING, &c.—Philander Perry, of Troy, N. Y.: I do not claim, broadly, or irrespective of arrangement, the placing of two pairs of grinding stones or plates on one shaft, for that has been previously done.

But I claim the specified arrangement for effecting the combination, in one machine, of the within described grinding mill, cob-crusher, corn-sheller, and straw-cutter, all for the purpose set forth.

[An engraving and full description of this mill will shortly appear in our columns.]

MACHINES FOR MAKING DRAIN PIPES—Bradford S. Pierce, of New Bedford, and Mason K. Pierce, of Mansfield, Mass.: We claim the arrangement of the mixing apparatus, pressing and core-relieving devices above the platform for conveying the molds, in the manner and for the purpose specified.

Also the arrangement of the core-socket upon the revolving disk to receive the core and the mold, with a provision for discharging the core through the platform, all in the manner and for the purpose specified.

JOURNAL BOXES—Wm. S. Pratt, of Brooklyn, N. Y.: I claim the rollers, D D, placed between the rollers, C C, in the position and for the purposes specified.

CAR COUPLINGS—H. Purlier, Jesse Harlan, and E. C. Cheek, of Cincinnati, Ohio: We claim the employment of the tripping-pin, b d, in combination with the latch lever, f g, arranged and operating substantially as described, for the purpose set forth.

HYDRANTS—Washburn Race and S. R. C. Mathews, of Seneca Falls, N. Y., We claim the combination and arrangement of the parts herein described, consisting of the cap, K, having within its socket the spring, j, or its equivalent, stem attachment, H, interior tube, D, conical valve, F, and closed seat, G, whereby the valve is kept in place by the force of the spring, j, and operated free from the external pressure of the water, substantially as and for the purpose set forth.

HARVESTING MACHINES—Saml. Ray and Moses R. Shalters, of Alliance, Ohio: We do not claim, broadly, the attaching of the finger bar, E, to the machine by means of a joint, to enable the finger bar to be raised or folded upward against the machine, for this has been previously done.

But we claim, first, Attaching the finger bar, E, to the machines by means of the plate, G, one end of which is pivoted to the machine as at I, and the other end connected with the finger bar oy joints, K K, the above parts being in connection with a jointed connecting rod, i, to admit of the folding and turning of the finger bar, substantially as described.

Second, Placing the driver's seat, J, on the springs, r, fitted in the hollow standards, p p q, substantially as and for the purpose set forth.

[The finger bar in this machine is so attached to the main frame that, when not in use, it can be adjusted or folded up by the side of the main frame in different positions, in order to facilitate the ready transportation of the machine. There is also a peculiar manner of counterpoising the finger bar to enable it to pass over the ground with but little friction, and the driver's seat is so arranged as to have the requisite degree of elasticity.]

FOLDING SEAT—T. Reeve and M. B. Swezey, of Brooklyn, N. Y.: We claim the seat, B, attached to the end piece, A, of the pew or settee by the pin, b, of the bar, c, and the slot, a, in the end piece, and provided with the hinged back, F, and support, E, the whole being arranged substantially as and for the purpose set forth.

[This invention is designed for a supplemental seat attachment to be applied to the ends of pews, settees, &c., adjoining the aisles or passage-ways in churches or public rooms, the seats being so constructed that they may be unfolded from the pews and made to occupy a portion of the aisles when the permanent seats are filled and occupied, and when not required they can be readily folded up.]

MACHINES FOR TEMPERING AND MOLDING PLASTIC MATERIALS—Silas C. Salisbury, of New York City: I claim the employment of a series of two or more cylinders and the intervening guard blocks, in combination with a cylinder of larger diameter provided with flanges on its ends, so that the periphery of the larger cylinder, with its flanges and the opposing surfaces of the series of cylinders and guard blocks, shall constitute the walls of a channel in which the plastic material, on its passage to the die or mold, is worked, tempered and pressed, as set forth.

I claim giving to the surface of the cylinder, b, a greater velocity than the surface of the large cylinder, A, for the purposes set forth.

I claim forcing the plastic material into the die, between the cutting edges, s s, by the pressure of a coat or layer of plastic material, formed on and adhering to the periphery of the large cylinder, as set forth.

REVOLVING FIRE-ARMS—Jacob Rupertus, of Philadelphia, Pa.: I claim, first, The safety tube, E, constructed, applied and operating substantially as and for the several purposes specified.

Second, Producing the necessary movements of the safety tube, E, by means of a forked or toothed lever, l, spring, J, or its equivalent, and a tooth, u, on the tumbler, the whole being applied and operating substantially as described.

[A magazine is provided for percussion caps or pellets within the hammer of a fire-arm. A feeding slide is applied to the hammer and its contained magazine, which is operated as the hammer falls, causing a cap or pellet to be delivered from the magazine in front of the face of the hammer, and so interposed between the hammer and nipple as to be exploded by being driven by the hammer in contact with the nipple or surface surrounding the vent. In the invention there is also a mode of applying and operating a piston to push forward the caps remaining in the magazine after every delivery made by the feeding slide, whereby the inventor is enabled to obtain the greatest length of magazine that the size of the hammer admits of. Half of this patent has been assigned to John Krider and J. T. Siner.]

ATTACHING THE RAILS OF CARRIAGE SEATS—Cornelius Scofield, of Trumbull, Conn.: I am well aware that rails have heretofore been attached to carriage seats by arms attached to seats, in a manner very similar to mine, and each provided with jaws which project over the rail, so that screws may be placed in those parts of the jaws before the rail in order to secure the same. In this case, however, it was necessary to remove a large number of screws in order to be able to remove the rail. I do not claim, therefore, the manner of securing the rail to the seat by means of arms and screws.

But I claim the arrangement of the arms, a, the ends of which form half round recesses, d, in combination with the arms, C, and thumbscrew, k, for the purpose of supporting the rail and securing the same to the seat, in the manner substantially as set forth.

[This invention consists in supporting the rail by which the top of a carriage is attached to the seat by means of arms, the ends of which form half round recesses which fit on the rod that constitutes the rails, and only two of those arms form jaws which extend far enough beyond the rail for a screw to pass through in front of the rail, so that they may easily be removed by taking out these screws and springing the rods constituting the rail out of the several recesses in which they rest.]

STEAM VALVES—C. A. Schultz, of New York City: I claim the combined arrangement of the spiral springs and their inclosing columns, with the plate, C, as and for the purposes described.

EXCAVATING MACHINES—Chas. Schott and James C. Baldwin, of Nashville, Tenn.: We claim the combination and arrangement of lever, D, with its connection with bucket, A, for loading and unloading, in the manner set forth.

TEA AND COFFEE POT—J. W. Sener, of Fredericksburgh, Va.: I claim the safety apparatus hereinbefore described, the same consisting in the combination of the tube, G, and the cap, H, and valve, J, constructed and operating as and for the purpose specified.

STOVES—S. B. Sexton, of Baltimore, Md.: I do not claim any of the parts of this stove separately considered.

But I claim the covered fuel cylinder, H, in combination with the chambers, A B B', flues C and D, and dampers, a and b, together with the rear casing, R, constituting a cold air chamber, the arrangement being as set forth.

TREATMENT OF INDIA RUBBER—Alexander Shannon, of New York, N. Y.: I do not claim the admixture of cork or other vegetable matter with caoutchouc, or similar gums.

Neither do I claim treating india rubber with sulphur, as that has been used in connection with metallic compounds, etc., but I claim the method herein set forth, of treating caoutchouc so as to combine therewith cork, or its equivalent, substantially as set forth.

INSTRUMENT FOR ASCERTAINING THE DIRECTION OF SOUNDS IN FOG, ETC.—Benj. F. Smith, of Philadelphia, Pa.: I claim a reflector made of suitable material and of such a form or shape that it will collect all the rays or waves of sound entering it, to a focus, when pointed towards the direction from whence sound comes, for the purpose of ascertaining the direction of the source of such sound, and conversely of throwing off from the reflector, in parallel lines, if need be, the sound of a bell or whistle, which may be placed at the focus of the said reflector substantially as described.

COAL OIL RETORTS—Wm. Smith, of Pittsburgh, Pa.: I am aware that shafts exposed to heat have been made hollow, and water or air conducted through them, for keeping them cool; I, therefore, do not claim this, broadly, But I claim the making of the agitating arms, h, hollow and to communicate with the hollow shaft, D, for the purpose of cooling them, by means of the current of air or water passing through the said shaft, substantially as set forth.

STOVES—Wm. H. Smith, of Newport, R. I.: I claim the arrangement of the partitions, F F', in combination with the partitions, K, and the openings, a a', for the purpose of forcing the hot air to circulate around and in front of the ash-box, substantially as and for the purpose specified.

[This is an excellent and economical stove.]

STOP-COCKS—Erastus Stebbins, of Chicopee, Mass.: I claim the arrangement and combination of the collar, I, flexible washer, H, metallic washer, G, as and for the purpose described.

Also the chambered nut or valve, L, having apertures, M, as and for the purpose described.

BRAKE-HEADS FOR RAILROAD CARS—Nathan P. Stephens, of Keene, N. H.: I claim, first, Suspending the brake-heads, D, to the ends of the transverse brake-bar, A, by the journals and boxes, substantially in the manner and for the purpose set forth.

Second, I claim forming cogs or protuberances on the peripheries of the journal-sleeves, C, and interposing strips of rubber, G, between them and the ends of the grooves in the journal box cap, in which the said cogs or protuberances move, for causing a greater pressure to be extended on the lower than on the upper portions of the shoes, E, as described.

[By this invention the brake-heads adapt themselves better to the periphery of the wheels, and exert their pressure in a better direction for preventing the motion of the wheels.]

EXCAVATING MACHINES—George D. Stillson, of Rochester, N. Y.: I claim in combination with an endless belt of digging hoes, a presser-wheel, that acts independently of the weight of the machine, for driving them into the ground as described.

GOVERNORS FOR SUGAR-MILLS—Robt. Stott, of Baton Rouge, La.: I do not claim, broadly, the use of a weight when acting through eccentric movements, to secure a uniform force and allow the subject to move under that force.

But I claim, in combination, the caps, S S, the bolts, V, the plates, X and Z, when actuated on by the employment of a weight, or its equivalent, through an eccentric movement, when made and arranged substantially as and for the purpose set forth.

WRENCH—Geo. C. Taft, of Worcester, Mass.: I claim the rosette, a, with a female screw, o, in combination with the stationary screw, b, traversing male-screw, f, and sliding-jaw, g h, with its female screw, p, substantially as and for the purposes set forth.

APPARATUS FOR DEEP SEA-SOUNDING AND METHOD OF CONVEYING AND PAYING-OUT LINE FOR OTHER PURPOSES—Wm. P. Trowbridge, of Washington, D. C.: I claim the mode of conveying and extending a line across or through a given space by means of a weight or projectile, the line being compactly coiled within a tube or case, which is attached to the weight or projectile, and moves along with it, and is discharged from the case or holder, as the weight or projectile advances, while one end of the line is retained at the starting-point substantially as described.

I do not limit my claim to the particular manner of coiling the line described, or to any one mode of giving motion to the same, which may be the force of gravity, the propelling power of a rocket, or cannon, or other motive power.

WASHING-MACHINE—Michael Van Debogert, of Binghampton, N. Y.: I claim, first, Subjecting the articles to be washed, to the combined action of the fluted or roughened surfaces of the tube and cylinder, the two surfaces moving, in part, in opposite, and in part, in the same direction with each vibration of the cylinder as set forth.

Second, I claim the arrangement of the means for gearing and ungearing the wheels, as recited, whereby I am enabled to give vibrating motion to both of the rubbing surfaces as described.

RAILROAD CAR BRAKES—A. P. Tutton, of Reading, Pa.: I am aware that shoes have been placed between the wheels of a truck, and so connected by levers that they could be pressed simultaneously against the treads of the wheels.

I do not claim, therefore, simply the employment or use of shoes placed between the wheels, at each side of a truck, to act upon the treads of the wheels, irrespective of the connecting of the shoes, to act as described.

I claim, therefore, connecting the two shoes, E E, between the wheels, B, at each side of the truck, by means of racks, B b, and a pinion, F, whereby the shoes, when brought in contact with the treads of the wheels are made by the action of the wheels to move simultaneously in opposite directions, and bind or wedge between them the wheels, to stop the same, substantially as described,

[Two shoes are placed between the wheels of a truck, at each side of it; the shoes at each side of the truck being connected in such a manner that the action of the wheels when the shoes are merely brought in contact with them, will move the shoes one upward and the other downward, so that they will wedge or bind between the wheels, and produce the requisite friction to stop the car.]

GRATES FOR FURNACES—Richard Van Velthoven, of Philadelphia, Pa.: I claim the frames G and G', with the bars, I, forming the hinged rear of a furnace-grate in combination with the releasing and retaining cam, K, operated by the rod, O, or its equivalent, and the bracket, J, with its projecting chain or equivalent, the whole being arranged substantially and for the purpose set forth.

HARVESTERS—Jacob V. A. Wemple, of Chicago, Ill.: I claim the guard-rod, W, to separate the falling grain from that which lies on the platform, which the rack is passing down, and lay hold thereof, and also to prevent the grain from falling on the rake, arranged and operated substantially in the manner described.

RAILROAD CHAIRS—J. W. Wetmore, of Erie, Pa.: I claim notching the caps of the adjacent ends of H or T. rails as at f, and the adaptation of a chair, A, to surround the ends or joint within the shoulders of the notches, the chair forming the bearing surfaces for its length, and its leaves being bent under the base of the rail, and resting on the tie, substantially as set forth.

MACHINE FOR COMBING FIBROUS MATERIALS—Cullen Whipple, of Providence, R. I.: I claim, first, Arranging the series of gill combs, a a a a, with a hot chest or its equivalent, in such manner, that said combs can be alternately sheathed and protruded from between heated plates, in the manner substantially as described, for the purposes specified.

Second, I claim the combination of the stationary heated chest, T, with the movable jaw, D, the two so combined, operating to hold the fibrous substance firmly while the front end is being combed.

Third, I claim arranging the series of fine screen combs, b b, with the heated chest, T, substantially in the manner described, and for the purposes specified.

Fourth, I claim the arrangement and combination of the revolving cylinder, C, for first combing the front end of the sliver, the series of fine screen combs, b b, for combing the back end of the sliver and the nippers, k, for drawing the silver through the screen-combs and delivering it upon the apron, the whole combination as arranged operating to draw and comb the wool or other fibrous material, in a straight line, and to deliver it in a position to be formed into a continuous sliver substantially as described.

STEAM-BOILERS—Edward Whiteley, of Boston, Mass: I claim the water tubes, f, within the space, E, surrounding the boiler, arranged and operating in the manner substantially as set forth.

MACHINE FOR SPLITTING FIRE-WOOD—W. L. Williams, of New York, N. Y.: I am aware that endless feeding chains have been previously used for feeding blocks of wood to be split, to the splitting-knives, and I do not claim, broadly, such device, irrespective of the lateral movement described, for chains for this purpose may be seen in my patented machine previously alluded to. The knife, D, has also been used and may be seen in the above-mentioned machine. I therefore do not claim the knife, D; but I claim, first, The employment or use of the endless feeding-chains, I I, when arranged as shown, or in any suitable way, so as to have the usual rotating movement around their pulleys, h h', and also the lateral movement for the purpose specified.

Second, The endless feeding-chains, I I, in combination with the yielding rollers, j j, for the purpose of permitting the lateral movement of the chains as set forth.

Third, The yielding pawls, h" h", in connection with the yielding rods, b' b' in shafts, e', and spurs, f, arranged substantially as described, to permit of the yielding of the blocks of wood while being split as described.

[Letters patent were granted this inventor for a machine doing the same work, dated April 14th, 1857, on which the above is an improvement. This invention consists in improvements in the mode of feeding the blocks of wood to the knife or knives whereby the difficulties hitherto attending that operation, such as the binding or wedging the blocks in the feed-box, the prevention of the free discharge of split wood and the rupture or breaking of certain parts of the machine are obviated and overcome.]

DOUBLE SEAMING MACHINE—James Wilson, C. Green, and Wm. Wilson, Jr., of Wilmington, Del.: We claim the combination of the discs, E and D, and the burring pulley, H, the bearing down pullies, I, the double burring pullies, K, and the finishing pulley, L, in the manner and for the purpose substantially as described.

MACHINE FOR CORRUGATING SHEET METAL—James Wilson, C. Green, and Wm. Wilson, Jr., of Wilmington, Del.: We claim the arrangement of the upper and lower heads, the forming-rollers, H H, together with the rollers which support the cylinders to be corrugated, at the requisite angle, substantially as described.

VARIABLE CUT-OFF GEAR FOR STEAM-ENGINES—D. A. Woodbury, of Rochester, N. Y.: I claim the arrangement of the rocker, J, and its variable slide, I, and the inclined or toggle-like connecting-rods, H H', in combination with the eccentric, M, or its equivalent, and the arms, G G', on the valve shafts, substantially as described.

[This invention consists in an arrangement of rocker fitted with a variable slide, and of two connecting-rods attached to the slide in combination with an eccentric and with the arms on the shafts of two cut-off valves, whereby a very simple and effective cut-off gear is obtained, which is variable either by a hand adjustment or to serve as a regulator of the speed of the engine under the control of a governor.]

MODE OF OPENING AND CLOSING FARM-GATES BY HAND—Gilbert Yates, of West Dresden, N. Y.: I am aware that it is not new for persons to open and close farm and other gates, without leaving their carriages, and that many devices for opening and closing gates in this way have been previously devised. One of these plans has been found in the patent of Webber, granted in 1855. I do not, therefore, wish to be understood as claiming to be the first to construct farm-gates in such a manner as that they can be opened by pulling upon a cord or chain, on one side, and then closed by pulling on a similal cord or chain on the other side.

But I claim the combination of the lever or arms, G G', with the connecting-arms, H H', vibrating, connecting and unlatching piece, I, and cords, c, Γ Γ': when arranged and combined with the gate and posts, substantially as and for the purposes set forth.

AUTOMATIC FAN—Geo. W. Zeigler, of Tiffin, Ohio: I claim the combination of the levers, B B, supporting the bedstead with the escapement wheel, F, lever, E, pendulum and fan, together with the parts connecting, the same for operating the fan from the weight of the occupant of the bed, as described.

RESTORING WASTE VULCANIZED INDIA-RUBBER—F. Baschnazel, of Wenham, Mass., assignor to the Beverly Rubber Company, of Beverly, Mass.: I claim the process described—that is, boiling waste vulcanized rubber in water, after it has been reduced to a finely divided state, for the purpose of restoring the same to a plastic, gummy, or elastic state, fit to be used again in the manufacture of india-rubber fabrics and substances, as set forth.

HYDRAULIC PRESSES—Thos. Baxter (assignor to Wm. H. Baxter), of Petersburg, Va.: I claim making the cylinders of hydraulic presses in a manner substantially as described.

NEEDLE WRAPPERS—Richard Bennett, of Redditch, England, assignor to J. F. Milward, of New York City. Patented in England May 7, 1857: I claim the employment, in combination with the outer wrapper, A, of an inner wrapper, b, with an attached piece, e, through which the needles are stuck, in the manner described.

I also claim the employment, in combination with such inner wrapper of a loop, a, secured to the outer wrapper, A, substantially as specified.

[The object of this invention is to confine needles within the paper wrappers in which they are put up for sale in a more secure manner than by the method generally employed, which does not afford security against their loss when the wrapper is open; and which, even when the wrapper is closed, does not prevent them from working their way through the ends as the paper becomes worn. The invention consists in the use of an inner wrapper, having attached to it a piece of cloth or other fabric through which the needles are stuck one by one, and which is capable of holding them, so as to prevent any longitudinal movement, and in providing the outer wrapper with an attached loop, through which the inner one containing the needles is passed, and by which it may be held while the wrapper is open.

HOLDING KEYS FOR STRAP CONNECTIONS FOR ENGINES—Truman Cook (assignor to A. T. Smith), of Washington, D. C.: I do not claim, generally, the principle of securing keys, for the purposes stated, as devices have been resorted to, with the hope of obtaining this object.

But I claim the notches, A F, in the key, as shown, the hole, C, in the gib, the notch, D, at the side of the said hole, the bolt, J, with its peculiarly formed head, B, and the combination and arrangement of these parts, substantially upon the principle and in the manner as set forth.

SAW JOINTER—Sherman McLean, of Royalton, N. Y., assignor to the American Trades Company, of New York City: I claim the arrangement and adjustment of the file in the tool or file carrier, so constructed, that when the flat side of the long arm of the tool is pressed against the side of the saw blade, it will present the file exactly at right angles to the angular edges of the teeth, and being passed along over them, will square and make uniform their edges, the saw blade being placed when the instrument is in use, between the long and short arms of the saw-jointer, as described.

MOLE PLOW—H. W. Rowland and E. Forbes, (assignors to themselves and Washington Witherow), of Newport, Ohio: We claim pivoting the carriage, A, to the beam, B, near its forward end, as represented, and in combination therewith, the curved colter, i, pivoted to the beam, B, and friction rest, c, all arranged and operating in the manner set forth.

CHAMBER OF ORDNANCE AND OTHER FIREARMS—John P. Schenkl, of Worcester, Mass., assignor to himself and E. A. Dana, of Boston, Mass.: I do not claim the invention claimed and described in the United States Patent numbered 21,802.

But I claim the combination of an intercepting rod or leader, p, with the secondary barrel or auxiliary charge chamber, and a projectile adapted to the gun or piece of ordnance.

THERMOSTAT FOR STEAM BOILERS—O. M. Stillman and S. Wilcox, Jr., of Westerly, R. I.: We do not claim immersing in the superheating steam bars composed of two metals, and controlling the heat by the deflection of the same, as this, or an equivalent use of such apparatus is well known, and has been described in Dr. Ure's Dictionary of Arts.

Neither do we claim enclosing within the superheated steam, a tube, or vessel, containing air, and allowing the contraction and expansion of the fluid to regulate the supply of heat to the steam, as this device, or its equivalent, has been before known.

But we claim regulating the flow of the products of combustion to the superheater by the difference in pressure between the superheated steam and that of saturated steam, substantially in the manner described and for the purpose set forth.

RE-ISSUES.

GRAIN AND GRASS HARVESTERS—E. B. Forbush, of Buffalo, N. Y. Patented July 20, 1852—Re-issued July 8, 1856: I claim first, The device for adjusting the cutting apparatus, which may be raised or lowered without changing the hight of the main frame, in combination with the finger bar, either with or without the removable platform substantially in the manner specified.

Second, The combination of the inner projecting ends of the main frame with the adjustable cutting apparatus substantially in the manner and for the purpose specified.

Third, Supporting the clamp and finger bar by means of the slotted iron frames, K K, and locking bolts, i i, in combination with the cross-pieces, T T, of the main frame, substantially as described.

Fourth, The mold board, L, constructed and arranged substantially in the manner and for the purpose set forth.

Fifth, Extending or widening out the upper part of the guard finger, substantially as represented by the overhanging bars, m m, in combination with the central bar, n in the manner and for the purposes specified.

Sixth, Arranging the three-pronged fingers above described, so that they mutually brace each other in front of the finger bar as set forth, and are also braced and supported at each end of the cutter bar by the projections, J, and m, substantially in the manner and or the purpose specified.

Seventh. The raking apparatus constructed and operating in the manner substantially as described.

Eighth, The movable fulcrum upon which the rake is suspended and operated in the manner substantially as described.

GRAIN AND GRASS HARVESTER—E. B. Forbush, of Buffalo, N. Y. Patented March 18, 1856: I claim, first, The manner of constructing and uniting the inner rear corner of the main frame, so as to depress or drop the shoe and cutting apparatus, and serve as a continuation of the shoe for treading down the stubble and mown grass, in the manner and for the purposes specified.

Second, The combination of the guide stirrup, B B, with the front of the main frame, so as to permit the draft-pole, P, to play above and below the front of the main frame, substantially as described.

Third, Connecting the draft-pole to the machine by the oscillating pendant, substantially as and for the purposes described.

Fourth, So connecting the draft-pole to the machine, as that the draft shall be from the axle or center line of the driving and supporting wheel in connection with the rear extension of the pole, in the manner and for the purposes specified.

Fifth, The combination of the extended finger-bar with the adjusting shoe, E, and adjustable hinged runner, q, substantially as described for the purpose specified.

Sixth, The combination of the main frame draft-pole P, guide stirrup, B, and adjustable shoe, E, arranged with each other, in the manner and for the purpose substantially as specified.

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Seventh, The adjusting shoe, E, constructed and operating in the manner set forth.

Eighth, The arrangement of the caster wheels, d and d d, with adjustable connecting bars, in relation to the finger-bar, platform and frames of the machine in the manner and for the purpose substantially as described.

WASHING MACHINE—H. E. Smith, of Philadelphia, Pa. Patented Oct. 26, 1858: I claim, first, The vessel, B, with its yielding valved diaphragm, J, and the perforated diaphragm, I, or its equivalent, in combination with a pipe, G, communicating with the vessel at a point above, and the pipe, H, at a point below the said diaphragm, and both pipes communicating with any suitable heating apparatus, substantially as and for the purpose set forth.

Second, The reciprocating plunger, C, with its enlarged end constructed as set forth, namely, with the recess, m, flauch, n, and perforations, p, in combination with the yielding diaphragm, I, for the purpose specified.

Third, Providing the plunger, C, with an upper enlargement, q, concave on the under side, and arranged in respect to the lower plunger, substantially as and for the purpose set forth.

ADDITIONAL IMPROVEMENTS.

ARITHMOMETER FOR ADDITION—Orlando L. Castle, of Upper Alton, Ill. Patented Nov. 2, 1858: I do not claim the use of any particular kind or arrangement of keys.

But I claim the combination of the rocker keys and shifting pawl, in any equivalent manner, and for the purposes set forth.

MACHINE FOR DRESSING MILL STONES—Simon W. Draper and R. M. Draper, of South Dedham, Mass. Patented May 13, 1856: We claim the bed-piece, A, with the cam, B, bar or lever, C, and rods, p p, attached, provided with springs, r, in combination with the frame or carriage, D, with pick shaft, i, attached, provided with the forked arm, e, the whole being arranged to operate as and for the purpose set forth.

[This invention relates to improvements in a machine for dressing mill stones, patented to these inventors May 25, 1852, and the date above, and the object is to obtain a greater length of traversing movement of the pick over the face of the stone without changing the position of the bed-piece.]

DESIGN.

STOVES—G. Smith and H. Brown, (assignors to North, Chase & North,) of Philadelphia, Pa.

Explanation.

The columns of the last number of the SCIENTIFIC AMERICAN were so overcrowded with the Patent Claims, that we had not space for our usual miscellaneous topics. The official copy of these Claims only reached us last week, on the day we ordinarily go to press, and therefore too late to enable us to prepare a supplemental sheet. These remarks also apply to the present issue, but we shall endeavor to make up the deficiency to the full satisfaction of our readers before the close of the volume. We hope that in future the Patent Office will be more prompt in furnishing us with the official List of Claims.

New Stove.

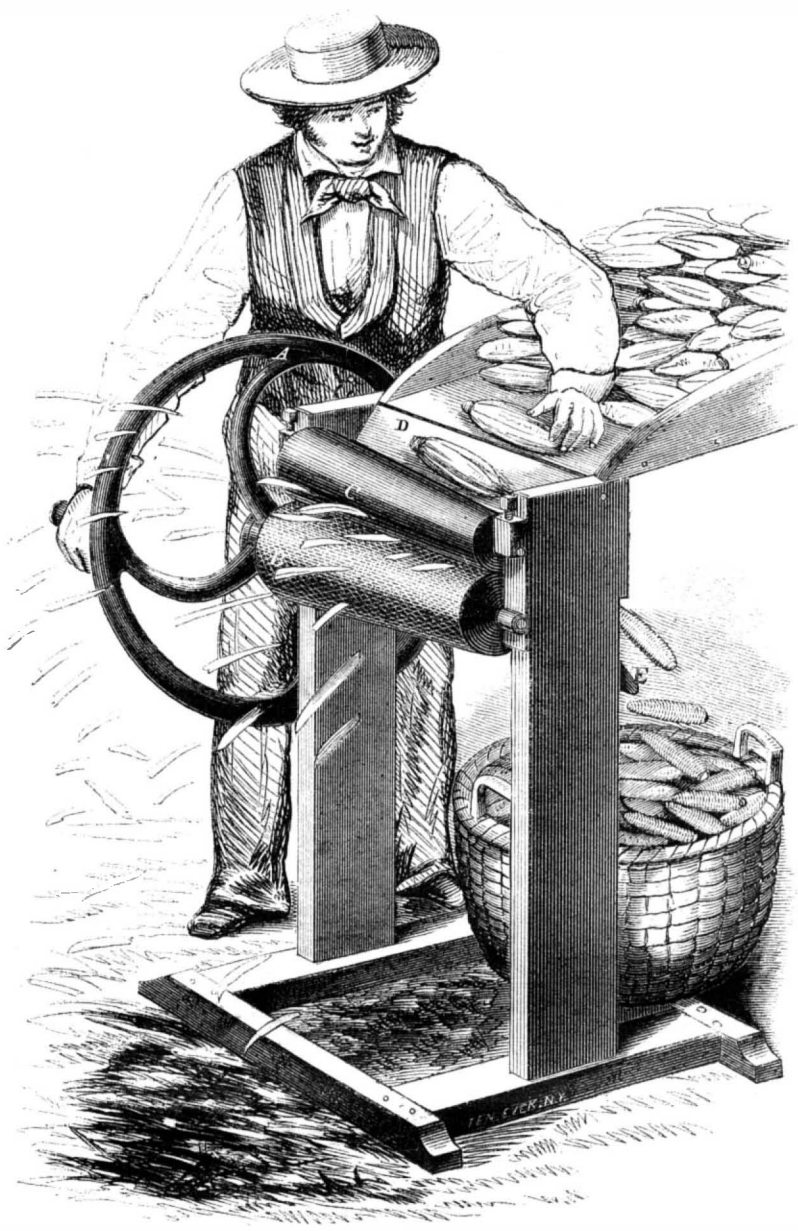
Mr. T. J. Whitehead, of South Paris, Me., has invented a new stove, which confines all the heat during the summer season and thus saves fuel, and facilitates the cooking or baking operations. It is a good stove for southern climates and even northern ones during the summer months, as it enables cooking to be performed without heating the room or inconveniencing the cook. In winter it can be arranged to warm the apartment as well as cook. It was patented March 29, 1859.

New Corn Husker

When one watches a husking party—either one that means pleasure or one that means work—the impression left on the mind of the beholder is that it is a very simple and easy thing to do; but it is really difficult and slow. It is therefore with a feeling akin to astonishment that the same person would look at many of the machines which have been devised by the ingenuity of inventors to perform the same operation. "Is it possible" such an individual would inquire "that it can take so much machinery to do so simple a thing?" And the only answer that could have been given would be a half melancholy "It seems so." We are happy, however, to describe a corn-husker that is really simple, as an inspection of the above engraving will at once convince the reader, in fact it is so simple that there can scarcely be said to be any description about it.

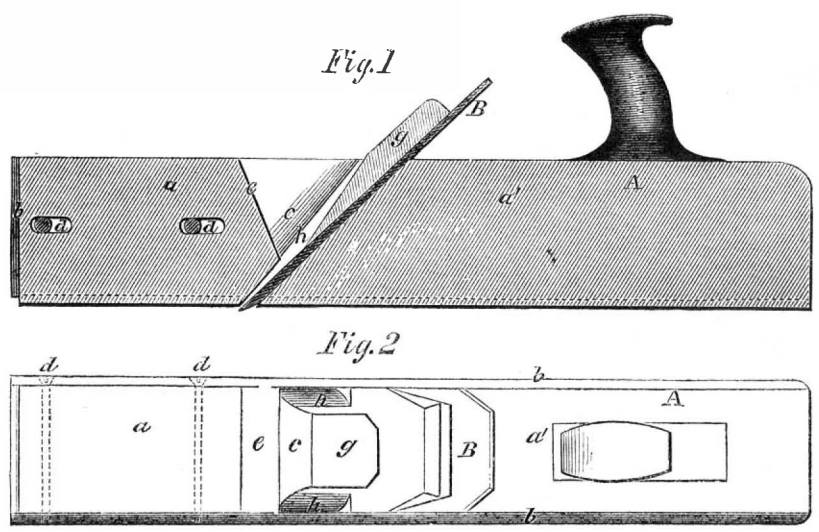
A small frame of rectangular form is the stand from which rises two uprights carrying between them a conical roller, C, and a toothed cone, B, laid the one on the other in elastic journals, their narrow ends together. The cone, B, is roughened or studded with small spikes and is formed of cast iron; the roller, C, is nearly or quite smooth. On the axle or arbor of B is a crank and fly-wheel, A, by which the device is operated, the fly-wheel enabling a good speed to be attained. An inclined board, D, is placed between the feeding board and the rollers, this is placed between the sides so as to swing freely up and down The operation is so easy that any one can use the machine. The ears of corn are placed with butts lying in the same direction and they roll down the board to the rollers which, catching hold of the husk, pull it cleanly off; and another ear coming down the yeilding board, depresses it, and allows the husked ear to fall down the shoot, E, into a basket or other receptacle, while the unhusked one takes its place and is very rapidly husked. This machine in no way injures the corn, but leaves the ear perfectly free from husk or fiber ready for the market or the mill.

SPEAR'S CORN-HUSKER.



The inventor is N. T. Spear, who may be addressed at room 18, No. 37 Park-row, New York, for further information. It was patented Sept. 14, 1858.

GORHAM'S IMPROVED PLANE.

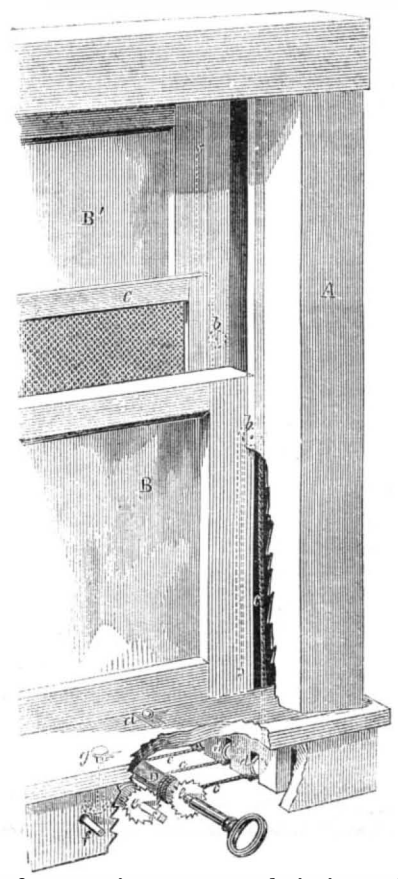


The stock of this plane is formed of wood with metal sides, and the front part is made adjustable by means of set screws, so that the "throat" may be enlarged and contracted at pleasure, as the nature of the work may require. Its construction will be fully understood by the following description and the accompanying engraving, in which Fig. 1 is a longitudinal vertical section and Fig. 2 is a plan or top view of the plane.

A is the plane stock which is formed of a wooden center, $a\ a'$, with a metal plate, b, on each side. The back part, a', is permanently attached to the metal plates, b, but the front part is allowed to slide longitudinally between the plates, b, and nearer to or further from the part, a', as may be desired; a being secured at any point by set screws, d. The throat, c, of the plane is formed between a and a' the front part of a' being doubly inclined as seen at e. The lower edges of the metal sides, b, do not extend down to the bottom of the wooden portion, $a\ a'$, of the stock, and consequently the bottoms of the wooden portion constitute the "sole" of the plane; the iron, B, is of the usual form and is secured in flanges, h, by a wooden key or wedge, g. From this description it will be seen that the plane may be very readily constructed, much more so than if made wholly of wood as is usual. The throat, c, is formed without difficulty and its orifice at the cutting edge of B can be contracted or enlarged as occasion may require. The plates, b, may be of cast metal and the stock of beech or of other wood.

The inventor is Jackson Gorham, of Bairdstown, Ga., from whom any further information may be obtained. It is patented this week and the claim will be found on another page.

Huey's Window Sash.



Our engraving represents a device invented by Wm. Huey, of Christiana, Pa., and patented by him Feb. 15, 1859, for the purpose of easily elevating window sashes and retaining them at any desired points in the frames.

A is a window frame made as usual, except at the base, which is also boxed to allow of the arrangements afterwards to be described being placed therein. The window frame has three grooves containing an upper and lower sash, B B′, carrying a plate of glass each, and between them another sash, C, holding a wire gauze or fine network screen; this is very useful, as in summer the top sash can be let down or the lower one raised, and the gauze moved to replace it, so that all the delights of the cooling breeze can be experienced without there being any fear of insects or dust entering the apartment. The bottom sash is held in place by a small catch, a, which has to be drawn back when it is raised. In the frame are small pullies, b, at varying heights to suit the respective sashes; and cords c, attached to the underside of B, B′, and C. and lying in grooves in their sides pass over them and under other pullies, d, at the corners of the frame. The cords, c, are secured to small arbors or drums, D, which are provided with ratchet wheels, e, and a square arbor, f, by which a key can be used to operate them A spring catch operated by a knob, g, retains the sashes in any position in which they may have been brought by the key and drum. It is not necessary that all the drums should be arranged as shown, one can be at the bottom and one at each side, or in any way that fancy or convenience may dictate. The other side of the sash is exactly like the one shown, and the cords of both sides being drawn equally, the sash is evenly elevated.

Any further particulars can be obtained by addressing the inventor as above.

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Scientific American.

NEW YORK, APRIL 30, 1859.

Interesting Experiments in Testing Belting.

As there is a vast amount of belting employed in our manufactories, and as the expense of maintaining the belts is very great, it becomes an important question as to what is the most appropriate material, and the best form of belting for this purpose. Two leading questions enter into this estimate, viz., the adhesive power and durability.

On several occasions we have presented information on this subject, and on page 357 of Vol. XII. and page 256, Vol. XIV., of the SCIENTIFIC AMERICAN, we described and illustrated certain experiments for testing the comparative qualities of flat leather and india-rubber belting, but have never given any information in regard to the comparative efficiency of belts of different forms. We will now detail some experiments which we witnessed a few days since at the store of J. W. Andrews & Co., No. 67 Pine street, this city, for testing the comparative qualities of good flat leather belting and tubular belting, made according to the patent granted to George Miller, of Providence, R. I., in 1854, and now manufactured by Miller & Andrews, of the same place.

The apparatus used for this purpose was a horizontal frame about twelve feet long, resembling a table without a cover. On one end was secured a shaft in fixed supports, and on the other end a similar shaft secured in supports situated on a small frame capable of sliding on the table, so as to be drawn back to tighten up the belts by tension weights attached to it by a cord hanging over the end of the table. On each shaft was a planed flat iron pulley, and also by its side a narrow grooved iron pulley. The former was twelve inches in diameter, the latter of the same diameter, but had a groove one-fourth of an inch deep, making the radius $5\frac{7}{8}$ inches. A flat 3-inch leather belt was placed over the two smooth pulleys, the grained side coming in contact with it, and a weight of 87 pounds was hung on the periphery of the pulley on the sliding frame. A crank on the shaft of the fixed pulley frame was then turned, when the belt slipped, and could not elevate the load. The flat belt was now thrown off, and a round one of half an inch in diameter was then placed on the two opposite grooved pulleys. The crank was now turned as before, when the 87 pounds weight was lifted with ease; to this was then added 87 pounds more, and that was also lifted, but not easily. The flat belt was now tried with 87 pounds of tension on the frame, when it again slipped; other 87 pounds tension were then added, and the weight of 87 pounds was lifted.

The difference of adhesive power between the round and flat belts, it will be seen by the above, is very great. With 174 pounds tension, the flat belt was enabled to lift only 87 pounds weight; with no tension on the sliding frame at all, the round belt lifted 174 pounds, which gives the latter belt four times as great adhesive power. As the tension is direct strain upon the pulley journals, it greatly increases the wear of the belt, therefore the belt which does the most work with the least tension must endure the longest.

These round belts are made by scarfing a a broad belt, and rolling it up, not spirally, lengthwise, but in a horizontal fold, so as to form a perfect round tube, with a very small central bore. Its form is stronger than that of a flat belt, and it accommodates itself snugly to the groove of the pulley, which increases the adhesiveness. A round belt of two-eighths of an inch in diameter, experience proves, is more than equal to a one-inch flat belt, and a half-inch round belt is more than equal to a three-inch flat belt. The saving of room by the use of the tubular belts, and the narrow pulleys which are employed in their use, are questions of economy for manufacturers. As the tension is much less on the round than the flat belt, they are much easier uncoupled from the grooved pulleys than would otherwise be supposed, and we believe these round belts will come into more general use when manufacturers and machinists become better acquainted with their advantages.

Messrs. J. W. Andrews & Co., 67 Pine street, this city, will be happy to show the above experiments to any persons who may desire to inform themselves more on this subject.

Cutting Fence Timber.

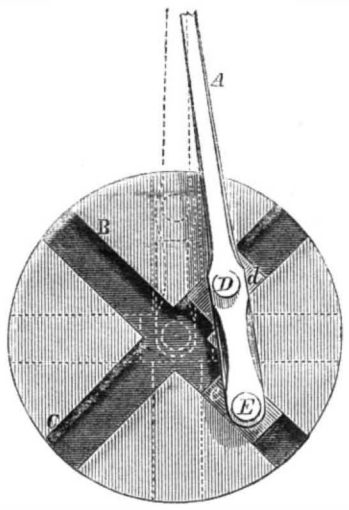
A practical farmer in a communication to the *Germantown* (Pa.) *Telegraph*, advances a peculiar theory in regard to the period for cutting timber intended for fences, especially for posts. The prevalent opinion in regard to the best time, is when the timber is most free from sap, and the very worst time is when it contains the most sap. This practical farmer referred to entertains the very opposite opinion. On one occasion he cut down some excellent white oak in the month of February and set it out in fence posts, and after this he cut down the same kind of timber in the month of May when it contained most free sap and set it out into posts also. The former posts lasted only *six years*; the latter endured twenty-two years.

This correspondent also advocates the cutting of timber for rails about the month of May when it contains most sap. He says if timber is cut for rails when the sap is running, the bark then stripped off and the rails made immediately, they will last one fourth longer than if cut at any other time and have the bark left on. The inside bark of the wood is the first to decay and rot; being of a porous nature it contains air and water which carry the process of decay into the wood. When the bark is peeled off, the sap soon dries and prevents decay." All experience goes to prove that the bark should always be peeled from chestnut or other rails in order to render them more durable; this is well known to every farmer, but it will hardly be conceded that the best time for cutting rail timber is when it contains most free sap. This is a practical question however which can only be decided by experiments, and it is one of no small importance, as a vast outlay is caused annually for repair of decayed fences.

The Nineveh Marbles.

It is related by historians that in "the days of old" there lived a famous warrior in Assyria named Ninus, who after conquering cities and provinces without number, at last founded his capital on the banks of the river Tigris, and called it Nineveh after himself. Whether this account of the origin of this city is true, or not one thing is certain, the Bible informs us that in the days of Jonah, the prophet of Israel, Nineveh was a great city, containing a population of 120,000 persons who could not distinguish their right hand from their left—young children—which would make the entire number of its inhabitants be about 600,000, the infants being about one-fifth of the whole. Strabo states that it was larger than Babylon, that its circumference was 47 miles, and that it was surrounded with walls 100 feet high, and so broad that three chariots could drive upon them abreast. It was distinguished for its riches, the grandeur of its temples and palaces, and was altogether for a period the most famous city in the whole world. It stood several sieges and was taken a number of times before the christian era; still it was a place of much importance down to the seventh century (A. D.) when it was completely destroyed by the Saracens, and left a huge heap of ruins. In the course of centuries the soil grew over these ruins, and Nineveh became outwardly but an extended grassy mound on which the Arab shepherd fed his flock, and pitched his tent in perfect ignorance of what was beneath his feet. But the finger of God was upon it, for with only the record of the Scriptures for his guide a young Englishman—Layard—sought for and discovered Nineveh again a few years ago, and exhumed from its subterranean courts some of the most remarkable works of ancient art yet discovered. Several of these are now in our own city, and have been presented by James Lenox, Esq., to the Historical Society of New York. They consist of thirteen slabs of marble, on which are sculptured winged figures of men, with long hair and beards, clad in robes and sandals and some of them have armlets, bracelets and swords. The figures are more symmetrical and better drawn than those in the Egyptian temples. One of them has the head of an eagle instead of that of a man, and carries something that resembles a basket containing mystic offerings. Another has a shallow bowl in one hand and a bow in the other. The figures are surrounded with broad ornamental borders in which the honeysuckle is frequently sculptured, and across the center of each slab runs an inscription in small characters of about twenty-five lines. Most of the stones have been broken into two or more pieces but have been skillfully put together again. In other respects they are well preserved. None of our learned men, we understand can yet decipher the hieroglyphics on these tablets, nor do they know the meaning of the figures sculptured upon them. That they have a meaning, no one can doubt, and it is to be hoped they will be studied by some plodding student until a key is found to unlock the whole mystery. The works of Rawlinson and Layard will help them out of the difficulty.

Grooved Crank Motion.



Numerous are the devices that have been invented as substitutes for the crank, for the purpose of converting rectilineal reciprocating into rotary motion and *vice versa*. The accompanying figure does not exhibit a contrivance for this purpose, but it belongs to this class of devices. We present it because it is sent to us almost every month by some amateur in mechanics, as a new invention, whereas it is more than half a century old at least, and we have had a model of it in our possession for eleven years. The object of this device is to give a double motion during each revolution, and which some have supposed would be very well adapted for sawmills.

A is the pitman and B C are two × grooves in the face of a plane wheel or pulley. The pitman is connected to the wheel by pins, E D, at two different points, and these are secured to slides *e d*, in the cross grooves. The dotted lines show different positions of the slides, grooves and pitman, and how the slides move in the grooves according to the positions which they assume as the wheel revolves giving to the pitman its double stroke during each revolution.

The great amount of friction involved by the slides moving in their grooves, renders this device but ill-adapted for the economical operation of machinery.

Steam Pump Fire Engines.

In almost all our cities steam power is rapidly superseding hand labor in the extinguishment of fires. In this particular feature of enterprise our western cities have taken the lead. Cincinnati, Chicago and St. Louis have manifested a most commendable amount of good sense in the adoption of steam fire-engines, as a general means of safety from destructive fires. The report of the Chief Engineer of the Fire Department of the latter city, lately published, presents in a very striking light the advantages of steam over hand fire-engines. The expense of the department for maintaining the steam-engines for one year was $55,000; for the hand engines, $30,000. But on the other hand, the efficiency of the steam *machines* is represented by the small amount of property destroyed in the proportion of $211,623 to $1,300,150, under the old regime, a saving of more than one million of dollars' worth of property. Our own city is somewhat behind the age on this question; perhaps our firemen consider themselves such high-pressure boiler-bursters as not to require the assistance of steam arms; but if they do not throw off all such notions they will soon find themselves distanced by their Brooklyn brethren. In the Eastern District of the latter city, one of the fire companies has just had a splendid steam machine built, which in a number of respects differs from any other that has yet been brought before the public. It consists of one of Guild & Garrison's powerful steam pumps (illustrated on page 105, Vol. XII., SCIENTIFIC AMERICAN), fitted upon a carriage with a compact vertical tubular boiler, and is the first of the kind which has hitherto been specially applied to such purposes. It is exceedingly compact, and weighs about one-third less than other steam fire-engines of the same capacity. It is of one foot bore and stroke of steam cylinder, and has an 8-inch pump. It has no water-box, and the boiler is fed from the discharge or air-chamber by a small tube—the pressure being sufficient for this purpose, without an extra feed pump. The parts of it, therefore, are few in number, and several trials which have been made with it have given perfect satisfaction as to the rapidity with which the steam can be raised, and the amount of water discharged in a given time. As direct-acting steam pumps are more simple than rotative engines, this new adaptation of them is a question of no ordinary interest.

At the recent conflagration in Boston, by which the Suffolk Flour Mills were destroyed, the "Eclipse," a steam fire-engine, manufactured by Messrs. Silsby, Mynderse & Co., Seneca Falls, N. Y., did good execution, and if the other engine which was brought to the work had operated with equal success, the fire would probably have been extinguished without so great a loss as occurred.

The American Home Garden.

"To those young men and women of the Union who would make their present or prospective homes rich with the comforts, bright with the beauties, and fragrant with the sweets that a garden may be made to yield," Mr. Alexander Watson, of this city, dedicates a very neat and useful volume bearing the above title, of which volume Messrs. Harper & Brothers are the publishers. A home garden, however small, it not only a source of much pleasure, but of some profit also. It is greatly to be lamented that those industrious mechanics and laborers in our cities, who above all other classes would be most benefited with woodbine-clothed cottages and smiling gardens, are just the very persons who are most signally deprived of such enjoyments. A home-garden leads to the elevation of our higher nature—the cultivation of a purer taste, and a higher appreciation of the beautiful in sight and feeling. The pleasure derived from the cultivation of flowers and fruits is exquisite and exhilerating. A sympathy grows up in the human heart for all objects of nature on which care has been be-

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stowed. The seed sown in spring is watched with solicitude until it comes forth a tiny blade, then a strong stalk, and finally a blooming flower. How sweet is the gale of summer as it comes laden with the fragrance of the home-garden, the odors of the rose, the wall-flower, the sweet brier, and myrtle!

To enjoy the benefits and beauties of a home-garden in the fullest sense, much experience, care, skill and knowledge are necessary in the treatment and arrangement of flowers, plants, shrubs, and trees. A reliable and comprehensive monitor, containing the information required for all such purposes, is the work of Mr. Watson referred to. We will quote a few extracts from it, which will be found not only very useful to many of our readers just at this period of the year, but they will also show the interesting character of the work from which they were taken :—

Sowing.—Unless the soil and location of the garden are very favorable, do not plant or sow your full crops, even of early vegetables, until the ground becomes warm and free; let a border, at most, suffice for extra early experiments. By this practice you will often excel in the quality and yield of crops, and sometimes in the earliness of their products.

Depth of Sowing.—It is sometimes imagined that the seeds of top-rooted plants, such as radishes, beets, &c., should be sown at a depth proportioned to their expected length of their product. The oaks that clothe our mountains sprang from acorns that were never buried; all self-sown seeds are cast upon the surface; those which are covered deeply in plowing seldom trouble the cultivator. * * * Except in special cases, shallow sowing is to be preferred to deep. In dry, hot summer weather, seeds should invariably be sown in soil freshly dug or plowed, and should then be sown rather deeper than in more moist and cool periods of the year. The depths at which they should be sown may be inferred from their size. If the seed be very small, it should be sown upon the surface (previously well pulverized), and then raked in carefully. * * * Seeds sown upon the surface, unless the weather is moist, should have a gentle watering for two or three evenings afterwards, and be shaded from the strong sunlight. Seeds which are not very small, such as those of radish, may be sown in drills half an inch or an inch deep, or upon a surface left somewhat rough, and then raked in. The seeds of beets and beans may be covered from one to two inches deep, the latter depth being sufficient for the largest seeds in the hottest weather.

Setting Out.—Trees that are liable to injury from the winter, such as the peach, and in some places the cherry, should be set out only in the spring. In chosing trees for setting out, those of moderate or even small size are to be preferred. Large trees suffer more by removal, and require more prompt and abundant supplies to support them vigorously. * * * In general, fruit trees should be set out where they are expected to remain in the second or third year from the graft or bud, except peach trees, which may be advantageously set out in the spring of their second year before the bud sprouts. * * * The depth at which they are set out is about that at which they previously stood.

If trees could ordinarily be removed with their roots from stem to extremity uninjured, the top might also be left entire. But the roots usually extend as far as, and often farther than their tops; therefore, if one-third of the root is sacrificed in the taking-up, the weight of the top is shortened to the same extent. In general, all the roots and all the branches should be operated upon; and in shortening the former, the cut should be made with a keen knife on the underside, and sloping outward, so that when planted, the face of the cut will rest upon the earth, affording a natural position for throwing out its young rootlets. The pruning of the top should also be done in a manner to balance the tree, and secure an outward growth of the shoots, which will in the main be effected by cutting from within outward, just above a bud situated on the under or outside of the young shoot.

Transplanting Shrubs.—All climbing shrubs transferred will be benefited by being cut down to the ground, so that the growth of the plant may be entirely new. The same is true of most varieties of bush shrubs, particularly the azaleas, wild roses, and the laurel (Kalmia), which, though an evergreen, is in this respect an exception to its class. This process is not to be rigidly applied to those plants which we select for the sake of their stems already formed, but it will be found good for most kinds from the woods, and very often nursery plants, if they have been over-forced or transplanted with the leaf, or if they have become wilted or weakened before being reset. Of eight laurel (Kalmia) which we saw transplanted last summer, without being cut down as directed above, only one is now living.

The foregoing selections are but a few buds from this really useful work. It contains many illustrations of implements, arts and practices in connection with the farm-garden and orchard.

Premium for a Steam-Plow.

There being already at the discretion of the Agricultural Society of Illinois a premium of $3,000 for the best practical and acceptable steam-plow, the Executive Committee of the Illinois Central Railroad have added $1,500 more, as follows:—

"*Resolved*, That the Illinois Central Railroad Company offer $1,500 as a premium for the best steam-engine for plowing and other farm work; the simplicity and economy of its construction, and its practicability of applica- to farm uses shall be such that it can successfully compete with animal power for farm purposes; the award to be made by the Executive Committee of the State Agricultural Society, in connection with three scientific machinists to be selected by that body. Before any party shall claim the payment of said award he must exhibit the practical working of said engine at three points on the line of the Illinois Central Railroad, to be designated by the Vice-President of the company; the said company agreeing to transport said engine to or from such points free of expense to said party."

This $4,500 is but a fleabite to the fortune that will accrue to the happy man who devises machinery by which plowing can be done wholesale, by steam or other mechanical power, to the depth of two feet, and at a moderate cost. And we have a firm faith that this consummation is not far ahead.

[We copy the above from the *New York Daily Tribune* of the 14th inst. Here is certainly a wide field for the exercise of ingenuity which will doubtless be well cultivated by our ingenious countrymen, who will thereby add another laurel to their fame as inventors.

About Poultry.

On page 219 of the present volume of the Scientific American we published a letter from a correspondent recommending a constant supply of raw meat to cause hens to lay when cooped. In confirmation of this fact we were the other day told a story which teaches science and is at the same time a record of true gallantry.

A gentleman had a very fine rooster, one of those splendid birds that think they are "some" and let the world know it. He one day discovered that the bird's comb had been bitten and was bleeding profusely, and at once concluded that the rats had done it while the rooster was on his perch; so determining to save his rooster he prepared to sacrifice the rats. Ratsbane was procured and sprinkled on the floor of the coop, but the rooster's comb grew less daily, and the poor bird departed this life by what was considered *foul* play. Another rooster was procured, but in a few days his comb was discovered bleeding, and fears were entertained for his safety, and great curiosity prevailed as to this peculiar epidemic, for it seemed nothing less; when one day the mystery was solved. His roostership was sitting quietly on the ground while the hens were busy pecking his comb and gradually eating it away. They were given some meat and the rooster was saved.

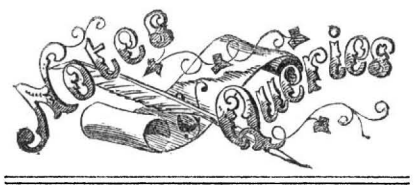
We suspect that few human husbands are gallant enough to submit quietly to such practical henpecking.

A Pike's Peaker's Outfit.—A gentleman who has "traveled all the way," assures us that the following is all that is necessary to secure a safe arrival at the new El Dorado—Pike's Peak :—

"100 lbs. of flour, 2 bbls. of whiskey; 50 lbs. of bacon, 49 gallons of whiskey; 100 lbs. of venison, 18 demijohns of whiskey; 2 boxes of dried herrings, 1 bbl. of whiskey; 1 bbl. of pickles, ⅔ bbl. of whiskey, 12 quart mugs. A little more whiskey may be necessary, but the other articles will hold out if the man is not a tremendous glutton."

The Great Billiard Match.

Two weeks ago the city of Detroit was a scene of great excitement. Michael Phelan of New York played John Seereiter of Detroit a full American game of billiards—three thousand points—for the round sum of ten thousand dollars. Phelan won by 96 points. Such is an abstract of the reports in the daily press, but we have a little more to say. The game of billiards is an eminently scientific one depending entirely upon a practical knowledge of the laws of force, impact and reflection. This Mr. Phelan has to an eminent degree, and more than that, he is an inventor of no small pretensions; we have procured five patents for him, all relating to his favorite game, or we should rather say study, for he has made it such, and the table used for the match was illustrated on page 116 of Vol. XI. of the Scientific American. We congratulate our client on his success, the more so because he will wear his laurels, we should say *bays*, with modesty, and will make Mr. Seereiter feel that it is no dishonor to be beaten by so great a master and so perfect a gentleman.



*** Persons who write to us, expecting replies through this column, and those who may desire to make contributions to it of brief interesting facts, must always observe the strict rule, viz., to furnish their names, otherwise we cannot place confidence in their communications.

We are unable to supply several numbers of this volume; therefore, when our subscribers order missing numbers and do not receive them promptly, they may reasonably conclude that we cannot supply them.

T. B. L., of Mo.—We are still decidedly of the opinion that your flying machine is impracticable, and it is much to be regretted that the "spirits" will continue to annoy you with such visionary schemes. They are good-for-nothing tormentors, and you had better clear them out of your head as soon as possible.

A. G. N., of Mass.—The varnish for enamel cloth is composed of linseed oil, boiled down with a drier, such as sulphate of zinc and litharge.

C. W. G., of Conn.—Chloride of sodium is common salt; chloride of tin is a compound of chlorine and tin. The latter is made by dissolving grain tin in hydro-chloric acid (spirit of salt).

S. B., of Mass.—Brewster's optics will give many directions how to make optical, philosophical and mathematical instruments.

F. W. E., of N. Y.—The boards for your barn-roof should be seasoned perfectly or else they will shrink, and thus tend to crack the composition material. Put on the gravel in two layers; the first one should be very thin.

N. T. W., of Me.—The sum of the velocities and leverage of a crank is exactly equal to the power of the stroke of an engine. If there were a loss of 20 per cent of power by the crank by changing the motion from rectilinear to rotary, and *vice versa*, five times, by devices applied to the most powerful engine, its whole power would be consumed, which is an absurdity.

W. C. R., of Pa.—If your marble is stained with iron rust, apply lemon juice to it with a clean rag and wash with warm water. If soiled with dirt, wash it with soap and "Paris white."

P. M., of N. Y.—Please to send for perusal "Annesly's Commentary on Ship-Building."

J. C. B., of Ind.—At present we do not know of any wood, card and silver-plate engraver who would be likely to fill the vacancy about to occur in Indianapolis. It seems to be a good chance for some one skilled in these branches.

T. G., of Minn.—The stone which has become clouded in resetting is, we should hardly think, a diamond; but if it is it should not have been exposed to too much heat. The only way to get back its pristine brilliancy is to have it re-cut by a lapidary.

C. S. G., of Ga.—Lime may be detected in water by the addition of a little dilute oxalic acid, when it will fall down as a white powder. Chills and fever probably arise from malaria, the product of animal and vegetable decomposition. The strata you describe, we should imagine, was a soapstone. The engine you refer to is said to be a good one.

H. W. M., of Mass.—With a flexible substance the pressure of the air must tend to keep it closer round the pulley if they are perfectly smooth and air-tight, and this would consequently improve the hug.

J. S., of N. Y.—Who is your authority for thinking that 2372° Fah. is the melting point of granite? We are positive that you have placed it too low. The plutonic theory of the earth's internal heat may be true or false, for all the arguments which have yet been advanced for and against it.

J. M. G., of Ohio.—Sound is a sensation produced upon sentient beings by the vibrations of matter. Without the organ of hearing, therefore, sound would be unknown. We do not know why telegraph poles "are always struck by lightning in groups of three and five" on the western prairies.

C. C. S., of Pa.—The best place to admit feed water to the boiler is by a pipe at its back end. The steam dome should be right above the fire-box.

C. P. M., of Ill.—It will take 31.92 ounces on the arm of a wheel of 22 inches, placed 3 inches from the axle, to balance three weights of 4 oz. each, situated at 11.8 and 5 inches from the axis on another arm of the wheel.

R. L. O., of Oregon.—Your sketch represents a perpetual motion project, and an impracticable one, like all the others we have examined. You cannot gain power by any combination of rollers or cylinders whatever, The reaction of the gutta-percha points in your machine is just equal to the power applied, and the gain is nothing.

S. R. M., of Pa.—Cantelo is an Italian, the first inventor of a practical egg-hatching machine. We believe he lives in Florence, but was formerly at Birmingham, England. We have not much faith in the permanent value of any other egg-hatcher than the one provided by nature.

P., of Pa.—Aluminum can be melted with a blast in a crucible, and gold or silver can there be added to make an alloy of these metals.

E. S. W., of Ill.—A wall which has been whitewashed with lime can be papered without any difficulty by giving it a coat of size before the paper is put on. If it has been whitewashed with Paris white, or if the lime-wash is thick and scaley, it should be scraped off before the paper is put on.

J. E., of Ohio.—Water-gas is made by passing steam over some oxydizable substance, such as red-hot anthracite; when the hydrogen is released, the oxygen changed into carbonic oxyd, and the vapor of an hydrocarbon, such as naphtha or benzole, being added, a very good illuminating gas is obtained. We question the statement that it is cheaper than coal, except in some carbonless localities.

Dr. L. L., of Tex.—We cannot supply you with the numbers you require as they are out of print. We should think a good pioneer machine-shop would do well, and, if properly managed, would pay. Our volumes sell for $2 75.

C. R. W., of N. J.—To transfer engravings to glass, they should be first attached to the glass by a colorless varnish, such as mastic, and the paper moistened by saturating it with an alkali, such as ammonia, when it will pull off easily, leaving the print on the glass.

Printing-Press.—A correspondent sends us the sketch of a press, accompanied with a letter written in pencil. We will thank him to send another sketch and description; also to give us his name and Post Office address.

W. A. M., of Mass.—A solution of the cyanide of silver will answer your purpose exactly. If you dip your brass articles in it and allow them to remain a minute or so, they will come out well plated The metal must be clean and free from grease.

Money received at the Scientific American Office on account of Patent Office business, for the week ending Saturday, April 23, 1859 :—

M. K., of N. Y., $10; G. & G., of Pa., $10; J. L. W., of N. Y., $27; J. W. T., of Vt., $25; J. S. McC., of Ala., $25; T. H. T., Jr., of Mo., $25; J. O. K., of Miss., $30; C. P., of Mass., $25; T. McB., of N. Y., $30; J. A. R., of N. J., $40; W. D. T. of N. Y., $30; L. K. S. of Ct., $55; J. D., of N. Y., $30; G. T., of Ind $25; G. W. M., of Pa., $25; T. J. G., of R. I., $30; I. R. S., of Va., $30; M. & W., of N. Y., $25; W. W. J., of Va., $25; W. H. K., of Ky., $40; N. & C., of Ct., $30; J. S., of Pa., $30; H. H. L., of R. I., $55; D. H. A., of Texas, $35; B. D., of N. J., $30; J. L. B., of O., $30; H. G., of N. Y., $30; W. S. G. B., of Ill., $25; R. C., of Texas, $30; W. H. R., of N. Y., $100; E. O. B., of Ill., $25; H. & H., of Mich., $20; E. C. B., of Mass., $45; T. D. C., of Pa., $10; C. F. A., of Vt., $55; J. A., of N. Y., $150; S. F. C., of Ct., $30; G. W. D., of N. Y., $50; H. H., of R. I., $25; H. O. A., of La., $35; B. & A., of N. Y., $55; A. & H., of Ct., $25; J. N., of Mich., $55; H. T. M., of Ill., $30; R. R. M., of Ill., $30; H. & J. S. B. N., of Me., $25; L. D., of Ct., $10; G. L. T., of Mich., $30; A. B. C., of Ga., $25; T. J. P., of O., $25; H. D., of Ct., $30; S. W. C., of Ct., $40; O. B., of O., $27; J. W., of Va., $55; G. D. G., of N. Y. $25; J. B., of N. H., $25; N. B. of Ill., $25; D. H. H., of Ct., $25; J. P., of Ill., $30; S. N. C., of Ill., $10; H. D., of Ct., $30; T. G. P., of Pa., $32; F. O., of N. Y., $30; D. T., of N. Y., $250; C. L. H., of Vt., $25; B. R. Jr., of Me., $25; J. A., of N. Y., $100; W. C. G., of Ct., $25; E. A. S., of Pa., $30; C. M. B., of Mo., $25; J. G. B., of Ill., $22.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, April 23, 1859 :—

M. & W. of N. Y.; H. A. of N. Y.; G. D. G. of N. Y.; J. S. McC. of Ala.; H. H. of R. I; D. H. H. of Ct.; D, H. A. of La.; A. B. C. of Ga.; B. R., Jr., of Me.; O. B. of O.; T. R. of N. Y.; W. S. G. B. of Ill.; J. L. W. of N. Y.; J. A. of N. Y. (2 cases); G. W. D. of N. Y. (3 cases); J. B. of N. H.; J. P. H. of Va.; N. B. of Wis.; C. P. of Mass.; G. W. M. of Pa.; C. L. H. of Vt.; B. & A. of N. Y.; G. T. of Ind.; C. F. A. of Vt.; J. N. of N. J.; W. W. J, of Va.; H. O. A. of La.; J. E. C. of Mass.; E. S. of Vt.; T. H. T., Jr., of Mo.; D. C. of N. Y.; T. J. P. of O.; T. W. of Va.; H. & J. S. B. N. of Me.; E. O. B. of Ill.; S. W. C. of Ct.; C. M. B. of Mo.

Literary Notices.

Blackwood's Magazine—Published by L. Scott & Co., Gold street, New York—This venerable monthly comes to us this month with all the keen wit and depth of penetration in tale, essay and poem, which distinguished old George Buchanan, whose sage yet humorous face always decorates its cover. "The Castes and Creeds of India;" "Italy and her Independence;" and "Napoleon III. and Europe" are excellent and able articles in this number.

New Publications received since our last issue.—"The Atlantic Monthly," Phillips, Sampson & Co., Boston; "The Musical Guest," M. Bell & Co., No. 13 Frankfort street, N. Y.; "L'Invention," Desnos-Gardissal, Paris, France.

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IMPORTANT TO INVENTORS.

AMERICAN AND FOREIGN PATENT SOLICITORS.—Messrs. MUNN & CO., Proprietors of the SCIENTIFIC AMERICAN, continue to procure patents for inventors in the United States and all foreign countries on the most liberal terms. Our experience is of thirteen years' standing, and our facilities are unequaled by any other agency in the world. The long experience we have had in preparing specifications and drawings has rendered us perfectly conversant with the mode of doing business at the United States Patent Office, and with most of the inventions which have been patented. Information concerning the patentability of inventions is freely given, without charge, on sending a model or drawing and description to this office.

Consultation may be had with the firm, between nine and four o'clock, daily, at their principal office, 37 Park Row, New York. We established, over a year ago, a Branch Office in the City of Washington, on the corner of F and Seventh streets, opposite the United States Patent Office. This office is under the general superintendence of one of the firm, and is in daily communication with the Principal Office in New York, and personal attention will be given at the Patent Office to all such cases as may require it. Inventors and others who may visit Washington, having business at the Patent Office, are cordially invited to call at our office.

We are very extensively engaged in the preparation and securing of patents in the various European countries. For the transaction of this business we have offices at Nos. 66 Chancery Lane, London; 29 Boulevard St Martin, Paris; and 26 Rue des Eperonniers, Brussels. We think we may safely say that three-fourths of all the European patents secured to American citizens are procured through our Agency.

Circulars of information concerning the proper course to be pursued in obtaining patents through our Agency, the requirements of the Patent Office, &c., may be had gratis upon application at the principal office or either of the branches.

The annexed letters from the last two Commissioners of Patents we commend to the perusal of all persons interested in obtaining patents:—

MESSRS. MUNN & Co.—I take pleasure in stating that while I held the office of Commissioner of Patents, MORE THAN ONE-FOURTH OF ALL THE BUSINESS OF THE OFFICE came through your hands. I have no doubt that the public confidence thus indicated has been fully deserved, as I have always observed, in all your intercourse with the Office, a marked degree of promptness, skill, and fidelity to the interests of your employers.

Yours, very truly, CHAS. MASON.

Immediately after the appointment of Mr. Holt to the office of Postmaster-General of the United States, he addressed to us the subjoined very gratifying testimonial:—

MESSRS. MUNN & Co.—It affords me much pleasure to bear testimony to the able and efficient manner in which you discharged your duties as Solicitors of Patents while I had the honor of holding the office of Commissioner. Your business was very large, and you sustained (and, I doubt not, justly deserved) the reputation of energy, marked ability, and uncompromising fidelity in performing your professional engagements.

Very respectfully, your obedient servant.

J. HOLT.

Communications and remittances should be addressed to MUNN & COMPANY, No. 37 Park-row, New York.

WARREN'S TURBINE WATER WHEEL—Improved and patented by A. Warren and E. Damon, Jr. The vast number of these wheels now in operation, and the invarible success attendidg them, is the best evideuce of their advantages over ordinary wheels in the economy of water power. The American Water Wheel Co. will send to applicants (enclosing two stamps) their pamphlet, containing engravings of turbines and a treatise on hydraulics. Address, A. WARREN, Agent, No. 31 Exchange st., Boston Mass. 32 9t*

FOR SALE.—ONE OF DANIEL'S PLANING Machines. Inquire at 179 Eldridge st., New York. 33 2* TOMPKINS & JENNINGS.

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500 AGENTS WANTED—TO ENGAGE IN a new, honorable and lucrative business. For full particulars, address M. M SANBORN, 34 3t* Brasher Falls, N. Y.

NEW PROCESS.—PHOTOGRAPHING ON WOOD, AND ENGRAVING THEREFROM.—Great improvement in wood-cut illustrations, by which pictures can be magnified or contracted with perfect accuracy and less expense than by the old tedious method of hand-drawing. Liknesses, landscapes, dwellings, or any manufactured article, taken from the originals, from daguerreotype or other picture representations. WATERS & TILTON, Photographers and Engravers, 90 Fulton street, New York. 34 3t*■

NEW METHOD OF MANUFACTURING VINEGAR BY THE QUICK PROCESS.—The advantages of this new method are:—One gallon of whiskey (50° Fah.) will furnish 14½ gallons of vinegar of 3 per cent ascetic acid, or 7⅛ gallons strong vinegar of 6 per cent, or 3⅛ gallons of 12 per cent—the least volatization—only one passage through the tubs, which may be of any size wished; the old tubs being used with but slight alterations, and no knowledge of theoretical chemistry needed, besides being able to keep the secret from the workmen. For terms of sale, address or apply to A. S., care of the "American Druggists' Circular," New York. 34 1t*

NOTICE.—THE SUBSCRIBER HAS IMPROVED his self-straining saw-irons so that the saw, with a 12-inch crank, will easily bear a motion of 300 per minute, bearing ⅝-inch feed in a 25-inch cut, in pine or poplar, whether rough or smooth timber, requiring 60 pounds of steam only, which is made with the sawdust and chips and ¼ cord of slabs per day, and so warranted. Letters accompanied by a postage stamp will be promptly answered. The "Sawyer's Companion," with a supplement containing recent improvements, will be sent on the receipt of $1. S. E. PARSONS, S. M. E. 34 1tc Wilkes Barre, Penn.

A SUCCESSFUL, DURABLE AND ECONOMICAL ROTARY ENGINE.—The Holly Patent Rotary Engine and Rotary Pump have now become well-known, and are in use for a variety of purposes in almost every State in the Union. They are regarded by engineers and practical men to be among the most valuable improvements of the age. The patents has now run a little over four years, and has gained for itself a reputation unprecedented in the history of any patented article. The subscriber will dispose of exclusive State rights either to vend or to manufacture and vend the same. Full descriptions of the improvements, with certificates, &c., and any further information, can be obtained by addressing H. C. SILSBY, Seneca Falls, N. Y., who is also sole owner of the Holly Patent Turbine Water-wheel (the cheapest and best turbine wheel in use), rights of which are offered as above. 34 4tc

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CARPENTER AND JOINER'S ASSISTANT.—The newest and best treatise ever published. Now publishing in about 20 parts, at 50 cents each. Parts 1 to 17 ready. See SCIENTIFIC AMERICAN of 16th April, 1859. BLACKIE & SON, 34 156 William street, New York.

RURAL ARCHITECTURE—DESIGNS FOR Ornamental Cottages and Villas, with plans, elevations, sections and details. By John White, Architect. Complete in 21 parts, folio, 50 cents each, or bound in half morocco, $12 50. Mailed or carriage paid on receipt of price. BLACKIE & SON, Publishers, 34 156 William street, New York.

MODEL AND PATTERN MAKING—BY J. MURRAY, No. 220 Center street, near Grand street, New York. 34 2t*

WROUGHT IRON PIPE FROM ⅛ OF AN inch to six inches bore; Galvanized Iron Pipe (a substitute for lead), Steam Whistles, Stop Valves and Cocks, and a great variety of fittings and fixtures for steam, gas, and water, sold at wholesale and retail. Store and Manufactory 76 John, and 29, 31 and 33 Platt st., New York. JAMES O. MORSE & CO. 31 13

GUILD & GARRISON'S STEAM PUMPS for all kinds of independent steam pumping, for sale at 55 and 57 First street, Williamsburgh, L. I., and 301 Pearl street, New York. 32 6m GUILD, GARRISON & CO.

FOR SALE—A STEAM-ENGINE, 60-HORSE power, with return flue boiler of 100-horse power. Were built to order, and are nearly new. Will be sold cheap. Inquire of NEWTON ADAMS, Lansingburg, N. Y. 32 5*

WOODWORTH'S PLANING MACHINES of every description, varying in price from $350 to $2,500, and each to plane tongue and groove. Address J. H. LESTER, No. 57 Pearl st., Brooklyn, L. I. 27 8*

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SUPERHEATED STEAM WITHOUT PRESsure dries green lumber in twelve to thirty hours; grain and meal for two cents a barrel; bakes bread and metal, and is the fire-proof furnace for warming buildings healthfully. Circulars free. Rights low. 33 2* H. G. BULKLEY, Kalamazoo, Mich.

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TO RENT—IN ONE OF THE BEST LOCAtions in the State, premises consisting of a Foundry, Machine, Blacksmith and Boiler Shops, with Tools, Patterns, Lathes, and Planers, all new and in good condition, particularly well adapted to all kinds of boat and engine work, and a general jobbing business; also, several fine rooms, with power suitable for any manufacturing business either in wood or iron with an amount of good docking. The premises are in the city of Buffalo, and will be rented in whole or in part to suit customers. Address E. & B. HOLMES, Buffalo, N. Y. 32 3*

SECOND-HAND MACHINERY AT VERY low prices for cash.—Steam-Engines, Slide Lathes, Planing Machines, Drills, Slotting Machines, &c.; also a variety of Mortising, Tenoning, and Sash Machines, &c., all warranted in good running order. Address CHARLES G. WILLCOX, 135 North Third st., Philadelphia, Pa. 32 6*

CHILLED ROLLS—BEST QUALITY—Such as are used in some of the best rolling mills in the United States.—This company has had a large experience in the manufactnre of Chilled Rolls, and can furnish them equal in quality, and quite as low as any other concern. Also, iron and composition castings, mill gearings, fan blowers, &c. Address Birmingham Iron Foundry Co., Birmingham, Conn. 33 2*

CHILLED ROLLS FOR ROLLING METALS, Paper, and India Rubber.—The undersigned having been engaged manufacturing these castings for many years, has succeeded in overcoming the difficulties attending the same; and thus reducing the cost, he is enabled to sell them at less prices than heretofore. A copy of the catalogue of his gearing patterns (upwards of 1800), and roll chills (about 100) will be sent by mail to any party desiring it. FRANKLIN TOWNSEND, Townsend's Furnace and Machine Shop, 33 4c Albany, N. Y.

WARTH'S SELF-ACTING WOOD-TURNING LATHES.—The best and most practical now in use; one boy will accomplish the work of four men. State and County rights for sale. Address A. WARTH, care W. H. Bertling, 23 Chambers st., New York, or the manufacturers, who have machines of all sizes on hand. Also a general assortment of machinists' tools. Circulars sent. Address CARPENTER & PLASS, 479 First ave., New York. 33 4*

STEAM-ENGINES AND BOILERS.—THE Subscribers are manufacturing a superior style of engine which is furnished with an extra amount of boiler and fixtures to match, at the following extremely low prices:—10 horse-power, $700; 16 do., $980; 25 do., $1,375: 35 do., $1,875; 50 do., $2,650; 70 do., $$3,650. These engines are in use in most of the middle, western and southwestern States. Descriptive catalogues furnished on application. D. A. WOODBURY & CO., Rochester, N. Y. 33 3tem*

ORNAMENTAL.—I WISH TO CORRESPOND with a party engaged in the manufacture of ornamental designs in bronze or any other metal. Those wishing to add a new and beautiful feature to their business would do well to address me at Youngstown, Ohio. WM. POWERS. 33 4t*

STEAM WHISTLES—ALL SIZES OF THE most improved patterns constantly on hand. Brass Lift and Force Pumps, (single and double-acting) Ship Pumps, &c., a full assortment. Manufactured by HAYDEN, SANDERS & CO., 16 13 eow* 306 Pearl st., New York.

J. A. FAY & CO., WORCESTER, MASS., make Stimpson's Patent Dowel Dovetail Machine; a beautiful, strong, and cheap joint for cabinet-work and store drawers. Sash Machinery; Woodworth's and Daniels' Planers, as usual. Send for a catalogue. 30&34 2*

BANCA TIN, INGOT COPPER, SPELTER, Lead, Antimony, Babbitt Metal, &c., Mount Hope Cut Nails, Ames' Shovels and Spades, for sale by JOHN W. QUINCY & CO., 98 William street, New York. 14 13e5w*

EIGHT-HORSE PORTABLE STEAM ENGINE, cylinder 7½ by 15, governor, balance-wheel, &c., attached to a flue boiler, all new. Price $600. S. C. HILLS, 12 Platt st., New York. 27 e3w

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FOUNDRY FACINGS OF EVERY KIND—Lehigh, per barrel, $2 50; sea coal, $1 75; charcoal, $2 25; soapstone, $1 75; clay, sand, and kaolin, $1; leads, 2 to 8cts. L. A. ORCUTT, 21 5*e4w Albany, N. Y.

INSTRUMENTS—CATALOGUE CONTAINING 250 illustrations of Mathematical, Optical and Philosophical Instruments, with attachment of a large sheet representing the Swiss instruments in their actual size and shape, will be delivered, on application, to all parts of the United States, by sending 12 cents in postage stamps. C. T. AMSLER, 22 7eow* No. 635 Chestnut st., Philadelphia.

BOLTS, RIVETS, NUTS, WASHERS, Square Head Wood Screws, and Chain Links, manufactured from superior quality of iron, suitable for machinists, millwrights, car-builders, miners, agricultural implements, &c. HOOPES & TOWNSEND, Buttonwood st., near Broad, Philadelphia. 32 6eow*

A SUBSTITUTE FOR LEAD PIPE.—A New and Valuable Article, viz., a Semi-Elastic Pipe or Hose which can be used with pumps of any kind, for suction, forcing, or conducting water in any and every place where pipe is required. Its properties are:—It imparts no deleterious effects to the water, nor in any way effects it unpleasantly after a few days' use; it is sufficiently elastic to be bent into curves, and it is unaffected by heat or cold: it will not burst if water is frozen into it; it is not injured by exposure to the sun or atmosphere; it is composed of ingredients indestructible, except by fire. Samples of it have been tested by use for three years, without the least apparent decay, and it can be made to bear pressure as high as 400 lbs. to the square inch. Price not far from that of lead pipe. Circulars with prices and particulars furnished by the manufacturers. BOSTON BELTING COMPANY, corner of Summer and Chauncey streets, Boston, Mass. 31 13*

CLAY RETORTS—THOS. HOADLEY, PATentee of the Patent Pyro-clay Gas Retorts—manufactory Nos. 32 and 34 Front st., Cleveland, O. 24 12*

HOLMES, BOOTH & HAYDEN, 81 CHAMbers street, New York, have now in store from their manufactory a complete assortment of Sheet Brass, Copper and German Silver; Brass, Copper and German Silver Wire; Silver Plated Metal, Copper and Brass Rivets, &c., to which they invite the attention of the trade and manufacturers generally, 29 8*

SOLUBLE GLASS.—TO BUILDERS, ROOFers, Masons and Railroad Contractors.—The Soluble Glass—Silicate of Soda or Potash—with the application of Chloride of Calcium, will make everything fire and waterproof, hardens walls, and produces the hardest roofing cement. For sale by DR. L. FEUCHTWANGER, 143 Maiden lane.

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EDWARD CONROY'S PATENT CORK-CUTTING MACHINE.—This machine, which is fully and accurately described in the Scientific American, Vol. XII., No. 46, is now in operation at the patentee's factory, No. 94½ Utica street, Boston, Mass. It is capable of cutting 10 gross of corks per hour, of all sizes, from the smallest homœopathic to the largest jug and demijohn corks. This it effects by means of its adjustable screw, without any expense or loss of time, while its self-feeding and sharpening devices insure the constant motion of the machine, and the most economical and best means of keeping it in order. State rights for sale; or the patentee would be willing to form a company in New York, which should possess the exclusive power to run the machines in that city and State, and in all the Southern States. For particulars address EDWARD CONROY, 94½ Utica street, Boston, Mass. 31 4t

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PATENT COMPOSITION BELTS PATENT PACKING—The Company have on hand and are ready to supply all orders for their superior Composition Machine Belting. They are proof against cold, heat, oil, water, gases, or friction, and are superior to leather in durability, and much cheaper in cost. The composition gives to these belts uniform durability and great strength, causing them to hug the pulley so perfectly that they do more work than any other belts of the same inches. The severest tests and constant use in all sorts of places during the last 14 months has proved their superiority, and enables the Company to fully guarantee every belt purchased from them. Manufacturers and mechanics are invited to call, examine, and test these belts. The Patent Packing for planed joints is in every way superior to any other article ever used for that purpose. A liberal discount allowed to the trade. "New York and Northampton Belting and Hose Co.," E. A. STERN, Treasurer, 217 Fulton st., New York. 30 13

DRAINING TILE MACHINES OF THE most approved construction, manufactured by R. R. GIFFORD, Albany N. Y. 23 12*

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THE PATENT RIGHT OF A CRADLE FOR sale, on entirely new principles. Apply at No. 23 Macdougal street, New York. 34 1*

FELT FOR STEAM BOILERS, PIPES, ship sheathing, marble-polishers, jewellers, and calico printers' use, manufactured by JOHN H. BACON. Winchester. Mass. 31 26*

WHITMAN'S TURBINE WIND WHEEL—Territorial or shop rights for sale. For particulars, inquire of the inventor, E. WHITMAN, at South Abington, Mass. 32 12*

THE MINIMUM FOUNTAIN PUMP—PATented Nov. 1, 1858.—This pump raises, conveys and ejects water, &c., to any given hight or distance. It requires but half the power that other pumps, &c., do; in short, its many advantages give it the mastery of the age. Rights for sale. A. L. KEEPORTS and GEO. PALMER, Littlestown, Pa. 32 3*

FOR SALE VERY LOW—SIX FIRST-CLASS Iron Planers, 8 and 12 feet; two Steam Engines, 25 and 30-horse. L. F. GOODYEAR, New Haven, Conn. 27 7*

GRAPHITE.—THE HERON MINING COMPANY, owners of the best and the largest known Graphite Mines, (those in Wake County, North Carolina,) have their Graphite, for Founders and for Lustre, prepared in the best manner, and also made into paint by their agents in New York, Messrs. D. F. TIEMANN & CO., No. 45 Fulton street. After long experience, the Heron Mining Company, with the best Graphite, and prepared as none others know how, are now supplying the market through their agents above named, who are in possession of the most ample testimonials of the superiority of this paint over all others. 32 4t*

REYNOLDS' CONCENTRAL PRESSURE Water-Wheel—Patented March 24, 1857. Adopted by the Hydraulic Canal Company at Oswego as their standard for high per centage of effect, combined with the utmost economy in the use of water. It is simple in construction, therefore cheap and durable. Send for a pamphlet, containing particulars, testimonials, &c., which will be sent free to any address by 32 5t* TALLCOT & UNDERHILL, Oswego, N. Y.

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STEPHENS' PATENT COMBINATION Rule of Boxwood and Hard Rubber, combining a Rule, Square, Level, Bevel, Indicator, &c. For illustration, see SCIENTIFIC AMERICAN, May 29, 1858.

"It combines more usefulness in a small, and withall in a very simple form, than anything of the sort ever before invented."—New York Tribune.

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CORLISS' PATENT STEAM ENGINES—On application, pamphlets will be sent by mail containing statements from responsible manufacturing companies where these engines have been furnished, for the saving of fuel, in periods varying from 2½ to 5 years. (The "James' Steam Mills," Newburyport, Mass., paid $19,734 22, as the amount saved in fuel during five years. The cash price for the new engine and boilers was but $10,500.) These engines give a perfectly uniform motion under all possible variations of resistance. Two hundred and fifty, varying from about 20 to 500-horse power, are now in operation. Boilers, shafting, and gearing. CORLISS STEAM ENGINE CO., 15 26* Providence, R. I.

GEER CUTTING ENGINE FOR SALE—New, and not surpassed by any other made. Will cut any kind, size, and number of teeth, from 6 feet diameter, 8 inch face, and 370 teeth, down to the smallest size, and is guaranteed by the makers perfectly accurate. Will be sold (to cover advance) at 20 per cent under maker's price. CHASE & TOWNER, Baltimore, Md. 33 3*

BOILER FLUES FROM 1 ¼ INCH TO SEVEN inches outside diameter, cut to any length desired, promptly furnished by JAMES O. MORSE & CO., 76 John st., New York. 31 13

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N. B.—Reliable orders filled for any part of the United States and Europe. 27 13

STEAM ENGINES, STEAM BOILERS, Steam Pumps, Saw and Grist Mills, Marble Mills, Rice Mills, Quartz Mills for gold quartz, Sugar Mills, Water Wheels, Shafting and Pulleys. The largest assortment of the above in the country, kept constantly on hand by WM. BURDON, 102 Front street, Brooklyn, N. Y. 27 tf

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MACHINE BELTING, STEAM PACKING, ENGINE HOSE.—The superiority of these articles, manufactured of vulcanized rubber, is established. Every belt will be warranted superior to leather, at one-third less price. The Steam Packing is made in every variety, and warranted to stand 300 degs. of heat. The hose never needs oiling, and is warranted to stand any required pressure; together with all varieties of rubber adapted to mechanical purposes. Directions, prices, &c., can be obtained by mail or otherwise, at our warehouse. NEW YORK BELTING AND PACKING COMPANY. JOHN H. CHEEVER, Treasurer. Nos. 37 and 38 Park Row, New York. 27 13

THE AUBIN VILLAGE GAS-WORKS WERE erected last year by one city and several village companies to their entire satisfaction. Towns having only fifty consumers of gas can rely on the stock-paying dividends; and if one hundred, 10 per cent will be guaranteed. For references, apply to the Company, No. 44 State street, Albany, N. Y. 28 tf

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CARY'S CELEBRATED DIRECT ACTING Self-Adjusting Rotary Force Pump, unequalled in the world for the purpose of raising and forcing water, or any other fluid. Manufactured and sold by CARY & BRAINARD, Brockport, N. Y.

Also for sale by J. C. CARY, 240 Broadway, New York City. 24 13t

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HOLLY'S PATENT ROTARY PUMP and Rotary Engine has no valves or packing, and is the most simple, durable, and effective Force Pump in use, as numerous certificates in our possession will prove. Also manufacturers of the celebrated Rotary Steam Fire Engines, with which we challenge the world, as to portability, time of getting at work, low pressure of steam used, quantity of water discharged, and distance forced. There are now four of these machines in use in the city of Chicago, and one in the city of Boston, Mass. Third class engine weighs about 7,000 pounds, and forces a 1½-inch stream 200 feet, or two 1-inch streams 180 feet, or one 1¼-inch stream 240 feet, with a steam pressure of from 40 to 60 pounds. Generates a working pressure of steam in from 4 to 6 minutes from cold water. Descriptive catalogues of pumps, engines, &c., sent to all applicants. SILSBY, MYNDERSE & CO., 23 13 "Island Works," Seneca Falls, N. Y.

IRON PLANERS AND ENGINE LATHES of all sizes, also Hand Lathes, Drills, Bolt Cutters, Gear Cutters, Chucks, &c., on hand and finishing. These tools are of superior quality, and are for sale low for cash or approved paper. For cuts giving full description and prices, address "New Haven Manufacturing Co., New Haven, Conn.' 27 13

HOYT BROTHERS, MANUFACTURERS OF patent-stretched, patent-riveted, patent-jointed, Oak-Leather Belting; Store, 28 and 30 Spruce street. Manufactory, 210, 212, 214 and 216 Eldridge st., New York. A "Treatise on Machinery Belting" is furnished on application, by mail or otherwise—gratis. 29 12*

CALIFORNIA AGENCY FOR PATENTS—WETHERED & TIFFANY, San Francisco, will attend to the sale of patent rights for the Pacific coast. References:—Messrs. Tiffany & Co., New York; Wethered, Brothers, Baltimore; George W. Bond & Co., Boston. 23 13*

LARD OIL MANUFACTURERS—MESSRS. WM. SKENE & CO. manufacture purified Lard Oil of the best quality, for machinery or burning, in Bullett st., four doors below Main, Louisville, Ky. 25tf

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BUTCHER'S IMPERIAL CAST STEEL FILES—The subscribers keep constantly on hand a very large assortment of the above celebrated files, which are acknowledged to be unequaled in quality, and to which the attention of railroad companies, engineers, and machinists is invited. BARTON & SCOTT, 25 26 No. 18 Cliff st., New York.

SAWTELL PATENT ELASTIC SPINNING FLYERS, manufactured by the Ames Manufacturing Company of Chicopee, Mass.—In these flyers the nozzle is cast on the arms, by which the two metals are firmly united together, but the wires are not heated annealed and weakened as in the old process. The flyers have been in use nearly five years, giving perfect satisfaction, and are undoubtedly a better article than can be had at any other place in the country. Spinning rings and spindles also supplied on the most favorable terms. Address AMES MANUFACTURING COMPANY, Chicopee, Mass. 31 4t*

HYDRAULIC JACKS OF 15, 20, AND 25 Tuns power—Prices, $100, $115 and $130 each. Hydraulic Presses of 15 tuns power, price $150. For sale by JAMES O. MORSE & CO., 76 John and 29, 31 and 33 Platt sts., New York. 25 3mos*

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Science and Art.

Griffith's Screw Propeller.

The inventor of this propeller (illustrated on page 352 of Vol. XII of the SCIENTIFIC AMERICAN), in a communication to the London *Mechanics' Magazine*, states that Chief Engineer Isherwood of our navy, labors under a mistake in supposing that by rounding the corners of the common screw-propeller and providing it with a spherical base, a Griffith's propeller is made. The broader part of the blade of his screw is placed nearest the center, whereas in common propellers the thread is cut away at the center. He asserts, that careful experiments have convinced him that the center of the screw is the most effective propelling part. This opinion is different from that generally entertained, it therefore should receive due consideration from our marine engineers. The Griffith's screw, as represented in our columns, is widest at the center; it has been applied to the *Niagara* and *Merrimac* frigates, and has acquired a very high reputation.

Improved Seed Planter.

There is no bank so safe, no speculation so surely remunerative, no investment so good as Mother Earth, she always gives a good return for labor or the seed deposited with her; she is not very exacting, for if we do but plow and harrow, plant and till, we shall be sure "to enjoy the kindly fruits of the earth in due season." To enable us to do this the better, mechanism steps in, and so we have that large class of inventions known as agricultural machinery, to which the subject of our engraving belongs. It is a seed-planter, invented by E. L. Lyon, East Randolph, N. Y., and patented by him August 31st, 1858. Fig. 1 is a perspective view, and Fig. 2 a section of one of the seed-boxes, which can be attached to any pair of wheels at a very low cost, the merits of the invention being its cheapness, simplicity and certainty of action.

A, represents an axle, and B, B, the wheels that are placed on its ends, and may be attached permanently to it; C, are shafts or thills, the back part of which are attached to the axle and have a driver's seat, D, placed on them.

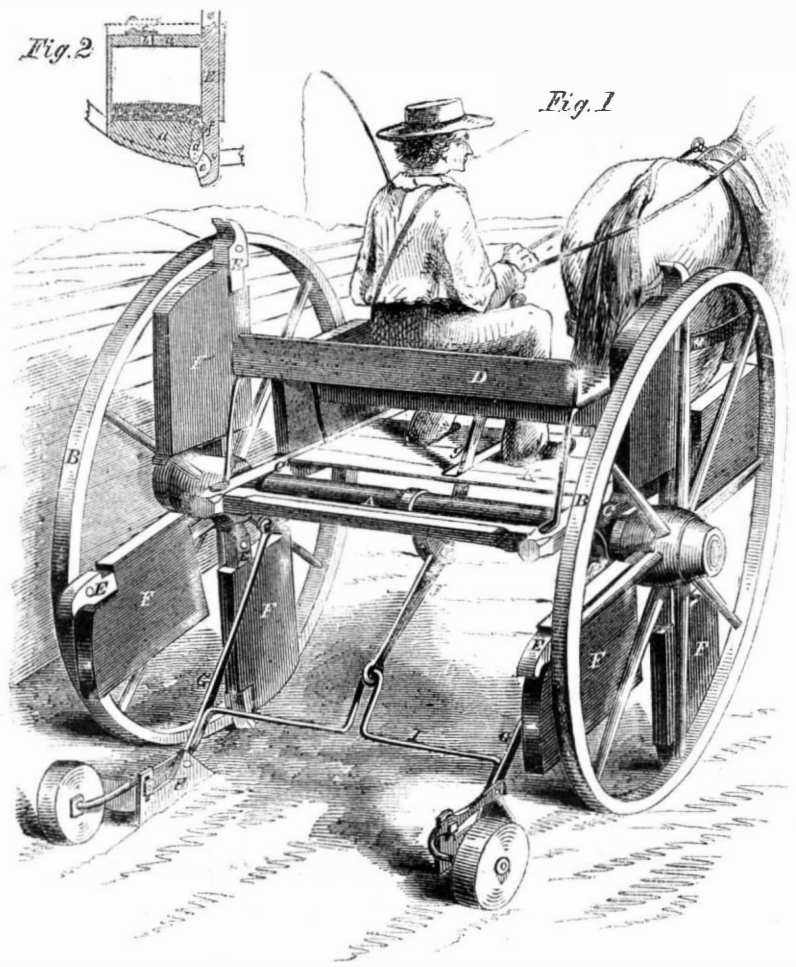
To the inner sides of the wheels, B B, radial bars, E, are attached. These bars are of rectangular form, and their outer ends project a suitable distance beyond the peripheries of the wheels, B, said ends being rounded, or of curved form. On each bar, E, a seed-box, F, is placed. These seed-boxes are of rectangular, flat form, placed flatwise on the wheels, and are allowed to slide freely on the bars, the boxes being retained properly in place by the end-pieces, *a*, of the said boxes, the end-pieces bearing against one side of the bars, E.

In the inner end piece, *a*, of each seed-box, an opening, *b*, is made. These openings are covered by a flap or lid, *c*, and the ends of the outermost end-pieces, *a*, have a semi-circular recess, *d*, made in them, adjoining the bars, E. Corresponding recesses, *e*, are also made in the bars, E, near their outer ends, one recess in each bar, and smaller recesses, *f*, are also made in the bars, E, at points some distance nearer their inner ends.

G G are two curved rods, the upper ends of which are provided with loops or sockets, and fitted loosely on the axle, A, the loops or sockets being allowed to turn freely thereon. To the lower ends of the rods, G, covering shares, H, are attached, one to each. The covering shares are connected by a rod, I, to which a lever, J, is attached, said lever having its fulcrum on the axle, A, and its front end extending up through a foot, K, in front of the seat, D.

The operation is as follows: As the machine is drawn along, the seed-boxes, F, are moved on the bars, E, by their own gravity, the seed-boxes falling or passing down towards the inner ends of the bars, E, when over or above the hubs of the wheels, and passing down towards the outer ends of said bars, as they pass below the hubs. This movement of the seed-boxes distributes the seed, for when the seed-boxes are at the outer parts of the bars, E, and consequently below the hubs of the wheels, the recesses, *f*, will fill with seed, for said recesses will then communicate with the interior of the seed-boxes, and as the seed-boxes pass above or over the hubs of the wheels, they, in falling, will bring the recesses, *d*, in the outermost end-pieces, *a*, of the seed-boxes in register with the recesses, *e*, so that when they again pass below the hubs the recesses, *d*, will pass

LYONS' SEED PLANTER.

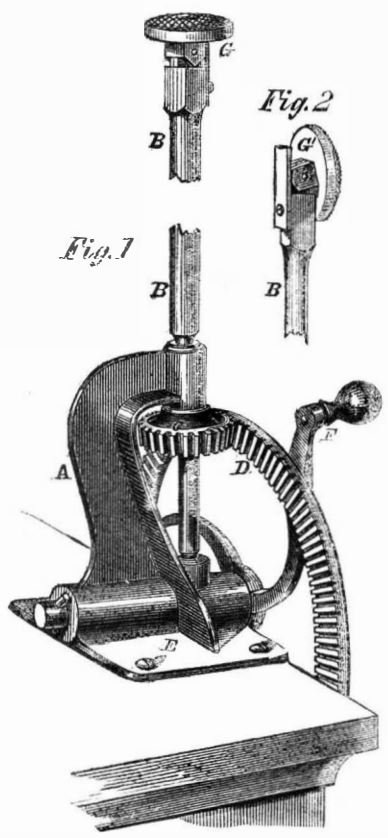


or fall in register with the recesses, *e*, in the bars, E, and the seed will be discharged into the holes in the earth made to receive it. by the projecting or outer ends of bars, E. The recesses, *f*, as the seed is discharged from the recesses, *e*, are filling with seed to be discharged at the succeeding revolution of the wheels. The shares, H, cover the seed; they may be elevated at any time by operating the front of the lever, which may be retained by any suitable catch or device.

This machine has been practically tested, and it operates well. Any proper number of seed-boxes may be attached to the wheels, according to the length of space desired between the hills or droppings. The seed-boxes may be constructed of sheet-metal, and the bars, E, may be of metal, or wood covered with metal plate.

Any further information can be obtained from the inventor as above, or by addressing Robert F. Ewing, box 1,932, Chicago, Ill.

Pease & Hayman's Peg Float.



That individual is truly entitled to the pity and commisseration of his fellow men whose shoemaker has left one little peg sticking through the inside of the boot, for of all the pains man can endure we know of none so keen as that caused by such an accident. Of course when boots and shoes are pegged, a great number of them project through the boot, and when it is taken off the "last" these have to be cut away. Our illustration shows a device for this purpose, the invention of E. R. Pease and R. R. Hayman, of Poughkeepsie, N. Y.

Fig. 1 shows the method of its operation. A casting, A, which is flattened out at E for a base, is secured to the table, bench, or counter and this casting has a horizontal bearing in which an arbor runs that carries a bevel or face wheel, D. This can be rotated by the crank handle, F. A shaft, B, having on it a gear wheel, C, is supported in vertical bearings in the frame, A, and this carries a rasp, G, which when rotated in the boot cuts off all the pegs, and moreover it can be placed at right angles to its former position as seen at G′, Fig. 2, and the foot of the boot or shoe being worked up and down on it, all the pegs in that part of the boot or shoe will be removed. The rasp, G, is pivoted to B and is kept in either position by a spring piece at the back.

This is a very useful invention for cordwainers and is much more convenient than the common hand float now so generally employed. It was patented Jan. 11, 1859, and any further information can be obtained from the inventors by addressing them as above.

Introduction of Carpets.

Carpets were in use, at least of some kind, as early as the days of Amos, about 800 B.C. They were spread on the ground, on which persons sat who dwelt in tents; but when first used in houses, even in the East, we have no record. In the twelfth century, carpets were articles of luxury; and in England it is mentioned as an instance of Becket's splendid style of living, that his sumptuous apartments were every day in winter strown with clean hay or straw, about A.D. 1160. The manufacture of woollen carpets was introduced into France from Persia in the reign of Henry the IV., between 1589 and 1610. Some artisans, who had quitted France in disgust, came to England, and established the carpet manufacture, about 1750. With us, as with most nations, Persia and Turkey carpets, the former especially, are most prized. Our famous Axminster, Wilton, and Kidderminster manufacture is the growth of the last hundred years. The weaver's engine (often called the Dutch loom) was brought into use in London from Holland in or about the year 1676; since then the general principle of the loom has been infinitely varied by mechanical ingenuity. There are about 250,000 hand looms in Great Britain, and 75,000 power-looms, each being equal to three hand looms, making twenty-two yards each per day. The steam-loom was introduced in the year 1807.—*English Exchange.*

Iodine for Browning Iron.

Of all the liquids and substances which have been recommended for browning iron, we do not remember to have noticed iodine among the number. Having lately tested it in the form of a tincture for this purpose, we have come to the conclusion that it is superior to muriatic, nitric, or any of the other acids commonly used for this object.

MECHANICS

INVENTORS, MILLWRIGHTS. FARMERS AND MANUFACTURERS.

FOURTEENTH YEAR

PROSPECTUS OF THE

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